IONOSPHERIC DATA

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The symbols and terminology used in this report are those adopted by the International Radio Propagation Conference, and given in detail on pages 24 to 26 of the report IRPL-C61, "Report of International Radio Propagation Conference," and in the section on "Terminology" in report IRPL-F5.

Beginning with IRPL-F14 the symbol L, defined as follows, is used in detailed tabulations of hourly values of ionosphere characteristics observed at Washington:

L or 1 = critical frequency, muf, or muf factor for F1 layer omitted because no definite and abrupt change in slope of the h'f curve occurs either for the first reflection or for any of the multiples.

In the past, ionospheric conditions were summarized on a monthly basis by using average or mean values for each hour of the day for each month. However, following the recommendations of the International Radio Propagation Conference, held in Washington 17 April to 5 May 1944, beginning with data for 1 January 1945, median values were used by IRPL wherever possible. Thus, median values are given for Washington, for all stations reporting directly to the CRPL, for the Canadian stations, and for all others sending to the CRPL detailed tabulations from which medians can be computed.

Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The monthly median values used here are the values equaled or exceeded on half the days of the month at the given hour. The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in the report referred to above, IRPL-C61.

a. For all ionospheric characteristics:
Values missing because of A, B, C, or F (see terminology referred to above) are omitted from the median count.

b. For critical frequencies and virtual heights:
Values of $f^{o}F2$ (and $f^{o}E$ near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F2 (and h'E near sunrise and sunset) missing for this reason are counted as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count. See CRPL-F38, page 9.
Values missing because of D are counted as equal to or greater than the upper limit of the recorder.
Values missing because of G are counted:
1. For $f^{o}F2$, as equal to or less than $f^{o}F1$.
2. For h'F2, as equal to or greater than the median.
Values missing for any other reason are omitted from the median count.

c. For muf factors (M-factors):

Values missing because of G are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because no Es reflections appeared, the equipment functioning normally otherwise, are counted as equal to or less than the median $f^{o}E$, or equal to or less than the lower frequency count of the recorder.

Values of fEs missing for any other reason, and values of hEs missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D.C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

Beginning with CRPL-F33, an additional group of symbols is used in recording the Washington, D. C. data. The list of additional symbols and their meanings follows:

N - unable to make logical interpretation.
P - trace extrapolated to a critical frequency.
Q - the F1 layer not present as a distinct layer.
R - curve becomes incoherent near the F2 critical frequency.
S - no observation obtainable because of interference.
V - forked record (previously denoted by U. This change should also be made in CRPL-7-1).
Z - triple split near critical frequency.

For a more detailed explanation of the meaning and use of these symbols, see the report CRPL-7-1, Preliminary Instructions for Obtaining and Reducing Manual Ionospheric Records.

MONTHLY AVERAGE AND MEDIAN VALUES OF WORLD-WIDE IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 55 and figures 1 to 101 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL predictions of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data:

Australian Council for Scientific and Industrial Research,
Radio Research Board:
Brisbane, Australia
Canberra, Australia
Hobart, Tasmania
Townsville, Australia

Australian Department of Supply and Shipping, Bureau of
Mineral Resources, Geophysical Section:
Watheroo, W. Australia

British Department of Scientific and Industrial Research,
Radio Research Board:
Slough, England

Canadian Radio Wave Propagation Committee:
Churchill, Canada
Clyde, Baffin I.
Ottawa, Canada
Portage la Prairie, Canada
Prince Rupert, Canada
St. John's, Newfoundland

New Zealand Radio Research Committee:
Campbell I.
Christchurch, New Zealand (Canterbury University College Observatory)
Fiji Is.
Kermadec Is.
Rarotonga I.

South African Council for Scientific and Industrial Research:
Capetown, Union of S. Africa
Johannesburg, Union of S. Africa

Scientific Research Institute of Terrestrial Magnetism, Moscow, U.S.S.R.:
Alma Ata, U.S.S.R.
Bay Tiksey, U.S.S.R.
Bukhta Tikhaya, U.S.S.R.
Chita, U.S.S.R.
Leningrad, U.S.S.R.
Moscow, U.S.S.R.
Sverdlovsk, U.S.S.R.
Tomsk, U.S.S.R.

United States Army Signal Corps:
Fukaura, Japan
Okinawa I.
Shibata, Japan
Tokyo, Japan
Wakkanai, Japan
Yamakawa, Japan

National Bureau of Standards (Central Radio Propagation Laboratory):
Adak, Alaska
Baton Rouge, Louisiana (Louisiana State University)
Boston, Massachusetts (Harvard University)
Fairbanks, Alaska (University of Alaska, College, Alaska)
Guam I.
Huancayo, Peru (Geophysical Institute of Huancayo)
Maui, Hawaii
Palmyra I.
San Francisco, California (Stanford University)
San Juan, Puerto Rico (University of Puerto Rico)
Trinidad, British West Indies
Washington, D. C.
White Sands, New Mexico
Wuchang, China (National Wuhan University)

All India Radio (Government of India), New Delhi, India:
Bombay, India
Delhi, India
Madras, India

Indian Council of Scientific and Industrial Research,
Radio Research Committee:
Calcutta, India

Radio Wave Research Laboratory, Central Broadcasting Administration:
Chungking, China
Lanchow, China
Peiping, China

French Ministry of Naval Armaments (Section for Scientific Research):
Fribourg, Germany

National Laboratory of Radio-Electricity (French Ionospheric Bureau):
Bagneux, France

Philippine Republic, Department of National Defense:
Leyte, Philippine Is.

Norwegian Defense Research Establishment, Florida, Bergen, Norway:
Tromso, Norway

Beginning with CRPL-F26, publication of tables of so-called "provisional data" reported to the CRPL by telephone or telegraph was discontinued. The reason for this change in policy is that users of the data hitherto published in this form receive them through established channels sooner than through the F-series. Furthermore, having two sets of data, "provisional" and "final," for the same station for the same month leads to confusion.

It must be emphasized that there is no change in the methods used for rapid reporting and exchange of data. The change has to do only with the printing of provisional data in the F-series.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of these errors are due to:

a. Differences in scaling records when spread echoes are present.

b. Omission of values when $f^{o}F2$ is less than or equal to $f^{o}F1$, leading to erroneously high values of monthly averages or median values.

c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts.

Month	Predicted Sunspot No.	Month	Predicted Sunspot No.
October 1947	119	October 1946	81
September 1947	121	September 1946	79
August 1947	122	August 1946	77
July 1947	116	July 1946	73
June 1947	112	June 1946	67
May 1947	109	May 1946	67
April 1947	107	April 1946	62
March 1947	105	March 1946	51
February 1947	90	February 1946	46
January 1947	88	January 1946	42
December 1946	85	December 1945	38
November 1946	83	November 1945	36

IONOSPHERIC DATA FOR EVERY DAY AND HOUR AT WASHINGTON, D. C.

The data given in tables 56 to 67 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Terminology and Scaling Practices."

IONOSPHERE DISTURBANCES

Table 68 presents ionosphere character figures for Washington, D.C., during October 1947, as determined by the criteria presented in the report IRPL-R5, "Criteria for Ionospheric Storminess," together with Cheltenham, Maryland, magnetic K-figures, which are usually covariant with them.

Table 69 lists for the stations whose locations are given the sudden ionosphere disturbances observed on the continuous field intensity recordings made at the Sterling Radio Propagation Laboratory during October 1947.

Table 70 lists for the stations whose locations are given the sudden ionosphere disturbances observed at the Brentwood and Somerton, England, receiving stations of Cable and Wireless Ltd. from September 22 through October 3, 1947.

Table 71 gives provisional radio propagation quality figures for the North Atlantic and North Pacific areas, for 01 to 12 and 13 to 24 GCT, September 1947, compared with the CRPL daily radio disturbance warnings, which are primarily for the North Atlantic paths, the CRPL weekly radio propagation forecasts of probable disturbed periods, and the half-day Cheltenham, Maryland, geomagnetic K-figures.

The radio propagation quality figures for the North Atlantic are prepared from radio traffic and ionospheric data reported to the CRPL, in the manner described in detail in report IRPL-R31, "North Atlantic Radio Propagation Disturbances, October 1943 through October 1945," issued 1 February 1946.

The radio propagation quality figures for the North Pacific are prepared from radio traffic and ionospheric data reported to the CRPL, in a manner similar to that of IRPL-R31. The master scale of IRPL-R31 was used to formulate conversion scales for the North Pacific reports. Beginning with CRPL-F23, issued July 1946, the North Pacific radio propagation quality figures reported are prepared from these revised conversion scales.

These radio propagation quality figures give a consensus of opinion of actual radio propagation conditions as reported by the half day over the two general areas. It should be borne in mind, however, that though the quality may be disturbed according to the CRPL scale, the cause of the disturbance is not necessarily known. There are many variables that must be considered. In addition to ionospheric storminess itself as the cause, conditions may be reported as disturbed because of seasonal characteristics, such as are particularly evident in the pronounced day and night contrast

over North Pacific paths during the winter months, or because of improper frequency usage for the path and time of day in question. Insofar as possible, frequency usage is included in rating the reports. Where the actual frequency is not shown in the report to the CRPL, it has been assumed that the report is made on the use of optimum working frequencies for the path and time of day in question. Since there is a possibility that all the disturbance shown by the quality figures is not due to ionospheric storminess alone, care should be taken in using the quality figures in research correlations with solar, auroral, geomagnetic, or other data. Nevertheless, these quality figures do reflect a consensus of opinion of actual radio propagation conditions as found on any one half day in either of the two general areas.

SOLAR CORONAL INTENSITIES OBSERVED AT CLIMAX, COLORADO

In table 72 and 73 the intensities of the green (λ 5303A), first red (λ 6374A), and second red (λ 6704A) lines of the solar corona as observed from September 20, 1947, through October 31, 1947, by the High Altitude Observatory of Harvard University and the University of Colorado at Climax, Colorado, are given for every 5° measured from astronomical north positively through the east for each day on which observations were possible. An arbitrary intensity-scale of approximately 0 to 40 is used. To convert from astronomical north and to determine the positions relative to the solar rotational equator, subtract the algebraic value of the position-angle of the solar axis. This quantity varies from -26 to +26 degrees during the year, and is tabulated in the nautical almanacs. If observations are uncertain, the initials l.w. (low weight) follow the date. The time of observation in hours GCT is listed. Dashes indicate that the intensity for that position is below the observable threshold. Absence of observation made at a given position is indicated by X.

AMERICAN AND ZÜRICH PROVISIONAL RELATIVE SUNSPOT NUMBERS

Table 74 presents the daily median values of relative sunspot numbers as reported by American observers for October 1947. The reports are reduced, by appropriate constants, approximately to the Zürich scale of relative sunspot numbers. The monthly relative sunspot number is the mean of the daily median values listed in the table. In addition, table 74 lists the daily provisional Zürich sunspot numbers. The first issue in which these numbers appear is CRPL-F35.

Table 1

Washington, D. C. (39.0°N, 77.5°W) October 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	260	7.0						2.8
01	260	6.7						2.8
02	265	6.2						2.7
03	260	6.0						(2.6)
04	260	(5.8)						(2.7)
05	250	5.2						2.7
06	265	5.4						(2.8)
07	250	8.5	240		120	2.2		3.1
08	240	10.1	230		110	(2.8)		3.1
09	230	11.5	220		100	(3.2)		3.1
10	240	12.4	220		110	(3.6)		3.0
11	240	12.8	220		110	3.7		3.0
12	230	13.0	220		110	(3.9)		2.9
13	250	13.0	230		110	3.8		2.8
14	240	(12.7)	230		110	3.6		(2.8)
15	240	12.6	230		110	3.3		2.8
16	240	(12.4)	240		110	2.8		(2.8)
17	240	(11.2)	245		120	(2.1)		(2.9)
18	230	(10.2)						(3.0)
19	230	(9.4)						(2.9)
20	240	9.0						2.9
21	250	8.0						2.8
22	250	7.4						2.8
23	255	7.2						2.8

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 2

Clyde, Baffin I. (70.5°N, 68.6°W) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300	4.6						
01	310	3.7						
02	290	3.4						
03	320	3.3						
04	300	4.7						
05	300	4.7						
06	310	5.5						
07	345	5.3						
08	395	6.4						
09	450	6.0						
10	430	6.4						
11	455	5.9						
12	440	5.8						
13	440	5.8						
14	455	5.6						
15	400	5.8						
16	380	5.4						
17	300	5.4						
18	300	5.4						
19	300	5.6						
20	300	4.8						
21	300	4.8						
22	285	5.4						
23	295	4.5						

Time: 75.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.

Table 3

Fairbanks, Alaska (64.9°N, 147.8°W) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	400	4.4					5.6	2.4
01	435	4.7					5.9	2.4
02	431	4.6					5.6	2.2
03	435	4.2					5.1	2.3
04	368	5.0				1.9	5.5	2.4
05	320	5.0				2.0	5.5	2.4
06	295	5.6				2.2	3.2	2.5
07	298	5.5	270			2.7		2.6
08	352	6.6	250	4.7		3.0		2.6
09	360	6.6	242	4.4		3.2		2.5
10	465	6.8	258	4.9		3.2		2.5
11	480	6.7	260	4.7		3.2		2.5
12	470	6.3	255	4.6		3.3		2.4
13	450	6.0	242	4.7		3.1		2.5
14	390	6.4	245	4.6		3.0		2.5
15	355	6.7	255	4.5		3.0		2.5
16	295	7.0	260	4.6		2.7		2.6
17	290	6.8	270			2.3	3.2	2.6
18	280	5.6				2.0	3.2	2.8
19	300	5.0				1.6	3.9	2.6
20	292	4.6				1.6	5.4	2.7
21	290	4.6					5.6	2.6
22	322	4.4					5.7	2.5
23	325	4.1					5.2	2.4

Time: 150.0°W.
Sweep: 16.0 Mc to 0.5 Mc in 15 minutes.

Table 4

Churchill, Canada (58.8°N, 94.2°W) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	(355)	(4.8)					3.5	
01	(355)	(4.7)					3.4	
02	(400)	(3.3)					3.3	
03	(380)	(3.2)					3.0	
04	360	3.5					3.2	
05	350	4.8					2.4	2.5
06	350	(5.2)						2.8
07	350	6.0				E		
08	305	7.0			130	3.1		2.7
09	350	(7.2)						
10	425	7.6					(2.9)	2.5
11	(440)	(8.2)					(3.0)	
12	(360)	(8.8)					(3.0)	
13	355	(9.6)						2.6
14	395	9.2		5.5			2.8	2.4
15	390	8.0	260	5.0			2.5	2.4
16	375	7.8	290	4.8	140	3.1		2.5
17	320	7.0				2.8		2.6
18	355	5.8			150	2.5	3.0	2.7
19	350	5.8			160	2.5	3.4	2.5
20	350	(4.8)					3.5	
21	350	(4.4)					3.5	2.4
22	(350)	(5.5)					3.5	
23	(360)						3.6	

Time: 90.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute.

Table 5

Prince Rupert, Canada (54.3°N, 130.3°W) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	330	4.1					3.0	2.7
01	370	3.8					3.5	2.6
02	355	3.8					3.8	2.5
03	370	4.0					3.6	2.5
04	370	3.8					3.4	2.5
05	350	3.6					2.5	2.6
06	310	4.0				E	2.3	2.6
07	305	5.4	270	3.7	120	2.2	2.6	2.8
08	400	6.2	250	4.2	120	2.8	3.4	2.5
09	480	6.2	240	4.5	120	3.0	3.1	2.5
10	460	6.4	230	4.5	110	3.3		2.4
11	480	6.6	220	4.8	110	3.4	3.7	2.4
12	445	6.8	240	5.1	110	3.5	4.0	2.4
13	420	7.2	230	5.3	110	3.5		2.5
14	390	7.6	230	5.3	110	3.5	3.4	2.5
15	370	7.8	240	5.1	110	3.3	3.7	2.6
16	340	8.0	240	5.0	120	3.1	3.3	2.6
17	300	8.1	250	4.5	120	2.8		2.7
18	265	8.3	270	4.2	120	2.4	2.0	2.8
19	260	7.5			E	1.9	2.2	2.8
20	260	6.1						2.8
21	260	4.9						2.8
22	280	4.9						2.7
23	290	4.2						2.7

Time: 120.0°W.
Sweep: Manual operation.

Table 6

Adak, Alaska (51.9°N, 176.6°W) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	360	4.4					2.2	2.4
01	350	4.1						2.4
02	360	3.5						2.4
03	370	3.4					2.0	2.4
04	380	3.3						2.3
05	355	3.4						2.4
06	300	4.2	290	3.4	120	2.1	2.0	2.5
07	290	6.0	260	4.0	110	(2.8)		2.6
08	340	7.9	240	4.8	110	3.2	3.8	2.7
09	305	8.8	240	5.4	110	3.4	3.8	2.8
10	300	8.9	230	(5.5)	110	3.6	4.0	2.7
11	345	8.7	230	6.0	110	3.6	3.8	2.6
12	330	8.3	230	5.0	110	3.6		2.7
13	330	8.6	230	5.2	110	3.6		2.7
14	340	8.2	240	5.1	110	3.5		2.7
15	275	8.2	240	5.2	110	3.3		2.8
16	250	8.2	250	(4.4)	110	2.8		2.8
17	260	8.0			120	2.5	2.6	2.9
18	260	7.8			120	2.3		2.9
19	260	6.2						2.8
20	265	5.9					2.1	2.7
21	280	5.4						2.6
22	300	5.0						2.6
23	330	4.5						2.5

Time: 150.0°W.
Sweep: 1.2 Mc to 15.5 Mc in 12 minutes, manual operation.

Table 7

Portage la Prairie, Canada (49.9°N, 98.3°W) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	320	5.1					3.8	2.5
01	325	4.6					3.8	2.5
02	300	4.4					3.9	2.4
03	345	4.6					3.8	2.4
04	320	4.6					2.6	2.4
05	320	4.7					2.6	
06	300	4.8			E	(1.8)	2.2	(2.6)
07	250	5.8			110	2.4		2.8
08	250	6.4			105	2.8		2.8
09	240	6.8		4.8	100	3.3		2.6
10	235	7.1		4.7	100	3.5		2.7
11	300	7.6		5.1	100	3.5		2.5
12	375	7.9		5.4	100	3.6		2.4
13	335	8.2		5.1	100	3.6		2.5
14	370	8.3		5.2	100	3.6		2.4
15	250	8.4		5.0	100	3.4		2.4
16	240	8.8		5.0	100	3.2		2.4
17	250	8.9			100	2.7		(2.5)
18	255	8.2			110	2.3		2.6
19	270	8.0			E	E		2.6
20	260	7.2					2.0	(2.5)
21	260	6.5					2.8	(2.6)
22	305	6.4					3.6	(2.5)
23	330	5.8					3.9	2.6

Time: 90.0°W.
Sweep: 1.0 Mc to 16.0 Mc in 2 minutes 30 seconds.

Table 8

St. John's, Newfoundland (47.6°N, 52.7°W) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	290	2.7					2.7	2.6
01	290	2.9					2.0	2.6
02	290	3.0					1.8	2.5
03	280	3.2					1.7	2.5
04	285	3.0					1.7	2.5
05	260	3.9					1.8	2.6
06	240	5.2	230	4.0	100	2.0	1.4	3.1
07	230	6.2	220	4.0	90	2.6	2.5	3.2
08	250	7.2	220	4.5	100	3.0		3.1
09	285	7.4	215	5.0	100	3.2	3.4	3.1
10	300	7.8	210	5.2	100	3.4	3.5	3.0
11	320	8.0	200	5.4	100	3.5	3.4	3.0
12	320	8.2	200	5.6	100	3.6	3.6	2.9
13	315	8.3	210	5.6	100	3.6	3.4	2.9
14	320	8.2	210	5.6	100	3.5	3.7	2.9
15	310	8.0	210	5.3	90	3.3	3.3	2.9
16	290	8.2	220	5.0	100	3.0	2.9	3.0
17	260	8.3	220	4.6	90	2.6	2.4	3.1
18	240	8.2	235	3.8	100	2.2	2.3	3.0
19	230	8.0					2.5	3.0
20	235	6.6					1.6	2.8
21	250	3.2						2.7
22	270	3.6					1.8	2.6
23	290	3.0					3.1	2.6

Time: 52.5°W.
Sweep: 1.2 Mc to 20.0°Mc, manual operation.

Table 9

Ottawa, Canada (45.5°N, 75.8°W) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	340	3.5						2.6
01	330	3.6						2.7
02	350	3.6						2.7
03	330	4.0						2.7
04	335	3.8						2.7
05	305	3.7						2.7
06	280	5.2						2.8
07	270	6.6	245	4.0	115	2.7		2.9
08	280	7.4	240	4.5	110	3.0		2.8
09	300	7.8	235	5.0	110	3.3		2.8
10	310	8.3	220	5.1	110	3.5		2.6
11	315	8.7	220	5.2	110	3.6		2.6
12	360	8.6	220	5.2	110	3.7		2.6
13	365	9.4	230	5.4	110	3.7		2.5
14	330	9.4	230	5.2	110	3.5		2.5
15	315	9.4	240	5.0	110	3.3		2.6
16	300	9.6	240	5.2	110	3.0		2.6
17	260	8.8	250	3.7	110	2.7		2.7
18	270	8.7						2.7
19	270	7.7						2.7
20	280	7.3						2.7
21	285	6.0						2.7
22	315	5.5						2.7
23	320	4.2						2.7

Time: 75.0°W.
Sweep: 1.7 Mc to 18.0 Mc, manual operation.

Table 10

Boston, Massachusetts (42.4°N, 71.2°W) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	330	6.0						2.5
01	350	5.6						2.5
02	320	5.4						2.6
03	315	4.7						2.5
04	325	4.4			135	1.4		2.6
05	320	4.5			125	1.7		2.7
06	300	6.4			130	2.3		2.8
07	300	7.2	270	4.9	120	2.7		2.9
08	300	7.8	255	5.0	115	3.2		3.0
09	310	8.0	250	5.1				2.9
10	305	8.2						2.9
11	360	8.3						2.8
12	340	8.4						2.8
13	330	8.2						2.8
14	345	8.0	250	5.2				2.8
15	350	7.6	265	5.1				2.8
16	325	7.7	280	5.1				2.8
17	300	7.8						2.8
18	300	7.5						2.8
19	290	7.6						2.8
20	295	7.5						2.7
21	300	6.9						2.6
22	305	6.7						2.6
23	320	6.5						2.5

Time: 75.0°W.
Sweep: 0.8 Mc to 14.0 Mc in 1 minute.

Table 11

San Francisco, California (37.4°N, 122.2°W) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	320	5.4						2.4
01	320	5.4						2.4
02	320	5.4						2.4
03	320	5.2						2.4
04	320	5.0						2.4
05	300	4.9						2.4
06	260	6.1			120	2.0		2.7
07	240	8.0			120	2.7		2.9
08	240	9.5	225	4.5	110	3.2		2.8
09	240	9.8	220		110	3.5		2.8
10	285	10.6	220	5.6	110	3.7		2.7
11	295	11.0	220	6.2	110	3.8		2.6
12	320	11.5	220	6.1	110	3.9		2.6
13	300	11.2	230	6.8	110	3.8		2.5
14	295	11.0	240	5.6	110	3.8		2.6
15	260	10.4	240	6.0	110	3.5		2.6
16	240	10.1	240	5.6	110	3.2		2.6
17	240	9.9			110	2.7		2.8
18	240	9.4			120	2.3	2.4	2.8
19	240	8.4					2.4	2.8
20	240	7.0					2.4	2.7
21	260	6.4						2.6
22	280	5.8						2.6
23	300	5.5						2.5

Time: 120.0°W.
Sweep: 1.3 Mc to 18.5 Mc in 4 minutes 30 seconds, automatic operation.

Table 12

White Sands, New Mexico (32.6°N, 106.5°W) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	310	5.8						2.5
01	300	5.7						2.5
02	300	5.6						2.5
03	300	5.4					2.4	2.5
04	300	5.2					2.4	2.6
05	300	5.2					2.8	2.6
06	270	6.4					3.3	2.9
07	240	9.0			120	2.8	3.6	3.0
08	240	10.0	240		120	3.3	4.0	3.0
09	265	10.6	220		120	3.6	4.2	2.8
10	280	11.2	220	5.2	115	3.7	4.0	2.7
11	320	11.5	230	5.5	120	3.9	4.2	2.7
12	320	11.9	230	5.5	120	4.0	3.8	2.7
13	320	12.0	230	6.0	110	4.0	4.1	2.6
14	300	11.6	230	5.7	120	3.8	4.0	2.7
15	260	11.4	240	5.0	110	3.6	3.8	2.7
16	260	11.0	240		110	3.3	3.9	2.7
17	250	10.2			120	2.9	3.6	2.8
18	250	10.0			120	2.3	3.2	2.9
19	240	8.4					2.8	2.8
20	250	6.8					2.5	2.7
21	280	6.2					2.4	2.7
22	300	6.2					2.6	2.6
23	310	6.0					2.5	2.5

Time: 105.0°W.
Sweep: 0.79 Mc to 14.0 Mc in 2 minutes.

Table 13

Wuchang, China (30.6°N, 114.4°E) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	260	9.2					3.0	2.8
01	260	8.6					2.0	2.8
02	260	7.8					1.8	2.8
03	265	6.9						2.8
04	250	6.4						2.7
05	260	5.8						2.7
06	260	6.8			120	1.4		2.8
07	230	10.0			100	2.3		3.1
08	220	11.0			100	3.0		3.1
09	220	12.3	220	7.4	100	3.4	4.5	3.0
10	295	13.2	215	7.5	100	3.7	5.1	2.9
11	280	13.5	220	7.0	100	3.8	5.0	2.8
12	305	14.0	218	6.8	100	4.0	4.4	2.8
13	312	14.4	220	7.1	100	3.9		2.8
14	310	14.5	225	7.0	100	3.7		2.8
15	310	14.8	230	6.8	100	3.6		2.8
16	255	14.2	230	6.1	100	3.5		2.9
17	240	13.8	240	6.0	100	3.0	4.1	3.0
18	240	13.0			100	2.3	4.2	3.0
19	240	12.0					4.1	3.0
20	240	11.6					3.7	2.9
21	250	11.0					2.8	2.8
22	270	11.2					2.8	2.8
23	272	10.0					3.2	2.9

Time: 120.0°E.
Sweep: 1.2 Mc to 19.2 Mc, manual operation.

Table 14

Baton Rouge, Louisiana (30.5°N, 91.2°W) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	310	6.0						2.7
01	310	6.0						2.7
02	310	5.6						2.6
03	310	5.3						2.6
04	310	5.5						2.7
05	300	5.4						2.8
06	290	6.8						3.0
07	290	8.9	250	(4.0)	120	2.6		3.0
08	300	10.2	240	(4.8)	120	3.3		2.9
09	300	11.0	240	(5.0)	120	3.7		2.8
10	320	11.5	235	(5.5)	120	3.8		2.8
11	355	11.8	240	(5.5)	120	3.9		2.8
12	380	12.0	240	(6.5)	120	3.9		2.8
13	360	11.8	240	(6.2)	120	3.9		2.8
14	360	11.7	240	(6.0)	120	3.8		2.7
15	365	11.7	250	(5.6)	120	3.6		2.8
16	330	11.3	250	(5.0)	120	3.4		2.8
17	310	11.0	250		120	2.6		2.8
18	270	9.8						2.9
19	265	8.5						2.8
20	270	7.1						2.7
21	290	6.5						2.8
22	300	6.1						2.7
23	310	6.0						2.7

Time: 90.0°W.
Sweep: 2.0 Mc to 15.0 Mc in 5 minutes, automatic operation.

Table 15

Okinawa I. (26.3°N, 127.8°E) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		9.2					3.6	2.6
01		9.0					3.5	2.6
02		8.4					3.2	2.6
03		7.2					3.2	2.6
04		6.9					3.0	2.5
05		6.7					3.2	2.5
06		6.5					3.0	2.5
07		8.9					3.6	2.9
08		(10.6)					4.4	(2.8)
09		(11.2)					4.8	(2.6)
10		(12.8)					5.1	(2.5)
11		(13.7)					5.3	(2.5)
12		(14.5)					5.6	2.5
13		(14.9)		(7.5)			5.8	(2.5)
14		(14.7)		(7.1)			5.0	(2.5)
15		15.1		(7.1)			5.0	2.5
16		(14.9)					5.2	(2.5)
17		15.1					5.0	(2.6)
18		14.3					4.8	2.6
19		(14.3)					4.1	(2.6)
20		11.0					4.0	2.6
21		(10.3)					3.6	(2.6)
22		9.8					3.6	2.4
23		(9.5)					3.7	(2.5)

Time: 135.0°E.
Sweep: 1.8 Mc to 18.0 Mc in 15 minutes, manual operation.

Table 16

Maui, Hawaii (20.8°N, 156.5°W) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	230	10.3						2.8
01	220	9.6						2.8
02	220	9.2						2.8
03	230	7.4						2.8
04	255	6.4						2.7
05	270	5.6						2.6
06	260	5.5						2.6
07	220	8.2			100	2.6		3.0
08	220	10.3	210	4.1	100	3.2		3.1
09	230	11.9	205	5.4	95	3.6		2.8
10	290	13.3	200	6.6	100	4.0		2.8
11	315	14.4	200	7.6	100	4.3		2.7
12	300	15.1	200	7.3	90	4.4		2.8
13	330	15.5	200	7.0	100	4.4		2.8
14	325	15.7	200	7.0	100	4.1		2.8
15	305	15.6	210	6.8	100	3.9	4.5	2.8
16	290	15.1	210	6.1	100	3.3	4.8	2.9
17	225	14.4	200	4.2	90	3.0	3.5	2.8
18	210	14.2			100	2.4	3.1	2.8
19	210	13.8					3.3	2.9
20	230	13.6					3.3	2.8
21	230	13.1					3.1	2.8
22	230	13.0					2.8	2.6
23	230	10.7					2.5	2.6

Time: 150.0°W.
Sweep: 2.2 Mc to 16.0 Mc in 1 minute, automatic operation; above 16.0 Mc, manual operation.

Table 17

San Juan, Puerto Rico (18.4°N, 66.1°W) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		8.0						2.7
01		8.0						2.8
02		7.2						2.8
03		6.7						2.7
04		6.6						2.8
05		6.3						2.8
06		6.8						2.8
07	270	9.1		2.9				2.9
08	290	11.0				3.2		2.8
09	310	11.5				3.5		2.8
10	330	12.2		5.5		3.7		2.7
11	350	12.3				4.0		2.7
12	360	12.8		5.9		4.1		2.7
13	365	12.5		5.8		4.1		2.6
14	370	12.6		5.9		4.0		2.6
15	350	12.2				3.8		2.6
16	350	12.0				3.5		2.7
17	310	11.5				3.0	4.0	2.7
18	300	11.0						2.8
19	315	9.8						2.7
20		9.0						2.6
21		9.2						2.7
22		8.8						2.7
23		8.7						2.7

Time: 60.0°W.
Sweep: 2.5 to 13.0 Mc in 8 minutes, automatic; supplemented by manual operation.

Table 18

Guam I. (13.5°N, 144.8°E) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	255	13.2					5.0	3.1
01	240	12.2					5.4	3.1
02	230	11.0					4.8	3.0
03	230	9.8					4.3	3.0
04	230	8.4					4.9	3.1
05	235	7.3					4.8	3.0
06	250	7.5					4.8	2.9
07	250	10.0					6.0	3.0
08	230	12.0					7.0	2.9
09	230	13.1					7.5	2.7
10	220	13.8					5.8	2.4
11	220	14.3					5.5	2.3
12	220	14.8					6.0	2.3
13	230	15.4					6.0	2.2
14	(220)	15.7	220				5.8	2.3
15	(420)	15.9	230				6.9	2.4
16	405	16.0	240				5.9	2.4
17	255	15.6					5.6	2.4
18	270	15.5					5.6	2.3
19	330	14.6					2.8	2.2
20	355	14.5					2.4	2.2
21	320	14.8					3.0	2.4
22	270	14.4					4.6	2.6
23	270	14.4					5.0	2.8

Time: 150.0°E.
Sweep: 1.25 Mc to 18.8 Mc, manual operation.

Table 19

Trinidad, Brit. West Indies (10.6°N, 61.2°W) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	280	10.2						2.8
01	270	8.9						2.8
02	270	7.8						2.8
03	270	7.4						2.8
04	270	6.7						2.8
05	280	5.5						2.6
06	280	7.2					2.2	2.7
07	250	9.6			120	2.8	3.2	3.0
08	250	11.2			120	3.3	4.0	2.8
09	270	12.6	240	5.8	120	3.7	4.4	2.8
10	280	13.2	240	(5.6)	120	4.0	4.4	2.7
11	320	13.9	230	5.9	120	4.1	4.8	2.6
12	320	14.1	240	6.0	120	4.2	4.9	2.6
13	345	14.2	240	6.2	120	4.2	5.4	2.6
14	355	14.0	240	6.4	120	4.2	5.0	2.6
15	380	13.4	250	6.4	120	3.9	5.1	2.5
16	300	12.9	250	6.2	120	3.5	4.7	2.6
17	270	12.2	260		120	2.9	4.7	2.6
18	280	11.8					3.6	2.6
19	285	11.4					3.0	2.6
20	300	11.1					2.8	2.6
21	285	10.9					2.2	2.6
22	290	10.9						2.6
23	290	10.8						2.7

Time: 60.0°W.
Sweep: 1.2 Mc to 15.5 Mc, manual operation.

Table 20

Palmyra I. (5.9°N, 162.1°W) September 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	250	14.2					1.7	3.3
01	250	12.5						3.0
02	245	11.8					1.6	2.9
03	250	10.2					2.0	(2.9)
04	250	8.6					2.4	2.9
05	250	7.6					2.6	2.9
06	280	7.2					3.6	2.8
07	270	9.0			120	2.6	4.0	2.7
08	250	11.3			110	3.4	6.4	2.6
09	240	12.4			110	3.8	6.3	2.5
10	230	13.0			110	4.1	5.2	2.4
11	280	13.5	230		110	4.1		2.4
12	290	13.9	220	5.7	110	4.3		2.4
13	290	14.1	220	6.4	110	4.1		2.4
14	280	14.5	220	6.0	110	4.2		2.4
15	280	14.1	230	6.2	110	4.0		2.4
16	280	14.0	240	7.0	110	3.6	3.6	2.4
17	250	13.8			110	3.0	4.3	2.4
18	280	13.4			130	2.2	3.8	2.3
19	350	12.4					3.4	2.2
20	400	11.6					2.4	2.2
21	350	12.9					2.0	2.4
22	280	13.6					1.8	2.8
23	260	13.6					1.8	3.0

Time: 157.5°W.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute, 36 seconds; 13.0 Mc to 18.5 Mc, manual operation.

Table 21

Peiping, China (39.9°N, 116.4°E) August 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		8.8						3.0
01		8.4						3.0
02		8.2						2.9
03		8.1						2.9
04		8.2						2.9
05		8.2						2.9
06		8.8						3.1
07		9.6						3.2
08		10.0						3.2
09		10.0						3.2
10		10.5						3.2
11		10.8						3.2
12		10.7						3.3
13		11.0						3.2
14		11.1						3.3
15		11.2						3.2
16		11.0						3.2
17		11.0						3.1
18		10.6						3.2
19		10.5						3.0
20		9.6						3.1
21		9.3						2.9
22		9.2						3.1
23		8.9						3.0

Time: 120.0°E.
Sweep: 1.7 Mc to 20.0 Mc in 15 minutes, manual operation.

Table 22

Chungking, China (29.4°N, 106.8°E) August 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	320	9.7					3.9	2.5
01	330	9.4					3.6	2.5
02	295	8.5					3.6	2.5
03	295	7.8					3.4	2.5
04	290	7.0					3.3	2.5
05	300	7.2					3.7	2.6
06	270	8.0					4.8	2.8
07	260	9.5					6.4	2.9
08	270	9.8	260		110	3.6	6.4	2.7
09	320	10.4	250				7.2	2.5
10	370	11.5	240	6.6			7.4	2.5
11	370	12.4	240	6.4			6.1	2.4
12	405	12.8	250	6.6			6.8	2.4
13	400	14.1	245	6.2	110	4.4	5.8	2.5
14	400	14.7	250	6.3			5.6	2.4
15	380	15.0	250	6.1	100	4.1	5.7	2.4
16	360	15.4	260	6.0	110	3.7	5.0	2.5
17	320	15.0	260		110	3.1	4.6	2.5
18	290	14.0					4.2	2.5
19	300	14.1					4.2	2.5
20	300	12.8					3.7	2.5
21	310	12.3					3.6	2.5
22	310	11.0					3.6	2.5
23	320	10.2					3.4	2.5

Time: 105.0°E.
Sweep: 1.7 Mc to 20.0 Mc in 15 minutes, manual operation.

Table 23

Okinawa I. (26.3°N, 127.8°E) August 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		10.1					3.6	(2.7)
01		9.0					3.4	2.6
02		8.3					3.3	2.6
03		8.3					3.8	2.5
04		7.0					3.0	2.4
05		7.1					3.0	2.3
06		6.6					2.6	2.7
07		8.3					3.6	2.9
08		9.3				3.2	5.0	2.8
09		9.4				3.5	5.1	2.6
10		10.5					5.7	2.5
11		11.8		6.4			5.8	2.5
12		12.5		6.5			6.0	2.5
13		13.3					6.0	2.5
14		14.2		7.0			6.0	2.5
15		14.8		6.4			5.6	2.5
16		15.1					5.4	2.6
17		14.5					5.2	2.7
18		14.2					4.8	2.7
19		13.8					4.3	2.7
20		13.3					3.7	2.6
21		13.0					4.0	2.6
22		12.4					3.6	2.6
23		12.0					3.6	2.6

Time: 135.0°E.
Sweep: 1.8 Mc to 18.0 Mc in 15 minutes, manual operation.

Table 24

Guam I. (13.5°N, 144.8°E) August 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	280	13.0					3.9	2.9
01	255	12.0					3.0	3.0
02	250	11.2					3.5	2.8
03	260	10.1					4.1	2.9
04	250	9.3					4.6	2.8
05	235	8.6					4.0	2.9
06	250	7.8					5.0	3.0
07	250	9.1					5.4	2.9
08	240	10.9			110	3.3	4.4	2.8
09	230	12.1					4.8	2.6
10	230	12.7			110	4.0	5.0	2.5
11	(275)	12.8	220		110	4.3	5.2	2.3
12	(350)	12.9	220		110	4.4	5.2	2.2
13	(440)	13.2	210			(4.3)	5.3	2.1
14	(410)	13.7	220				5.1	2.2
15	(425)	13.6	220		110	4.2	5.4	2.3
16	(435)	13.6	240		110	3.8	6.5	2.2
17	240	13.6			110	3.3	7.0	2.2
18	260	13.7					7.0	2.2
19	310	13.0					5.0	2.2
20	390	12.2					3.4	2.1
21	345	12.5					2.6	2.2
22	310	12.8					3.2	2.4
23	290	12.9					3.3	2.6

Time: 150.0°E.
Sweep: 1.25 Mc to 18.8 Mc, manual operation.

Table 25

Leyte, Philippine Is. (11.0°N, 125.0°E) August 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		9.8						2.9
01		8.8					1.8	2.9
02		8.2						2.9
03		7.8						3.1
04		7.0					2.0	3.0
05		5.9					2.1	3.0
06		8.7				2.6	3.2	2.8
07		10.6				3.5	5.0	2.8
08		11.7					5.2	2.6
09		12.3					5.1	2.4
10		12.1					7.1	2.2
11		11.9					6.2	2.2
12		11.6					5.8	2.1
13		11.8					<6.4	2.1
14		11.5					<5.8	2.1
15		11.5				4.0	6.2	2.1
16		11.5				3.4	5.0	2.2
17		11.2				2.6	5.0	2.2
18		10.6					3.1	2.2
19		9.6						2.0
20		8.7						2.1
21		9.5					1.6	2.3
22		9.6					2.3	2.6
23		10.5					<2.1	2.7

Time: 120.0°E.
Sweep: 1.6 Mc to 16.0 Mc, manual operation.

Table 26

Johannesburg, Union of S. Africa (26.2°S, 28.0°E) August 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	260	4.3						2.9
01	(270)	4.0						2.9
02	(270)	3.8						2.9
03	250	3.5					2.3	3.0
04	(280)	3.4						2.9
05	(295)	3.4						2.9
06	(270)	3.5						2.9
07	280	7.9				2.3	2.5	3.3
08	220	10.4			100	3.0		3.3
09	230	11.6	220		100	3.5		3.2
10	250	12.5	210		100	3.7		3.1
11	290	12.8	210		100	3.9		3.0
12	250	12.5	200		100	4.0		2.9
13	280	12.6	200	4.6	100	(4.0)		2.8
14	(290)	12.5	210	(4.7)	100	3.8	4.0	2.8
15	(270)	12.3	220		100	3.6	3.7	2.8
16	(260)	11.9	220		110	3.3		2.8
17	230	11.7			110	2.6		2.9
18	230	11.2					2.7	3.0
19	220	9.9					2.3	3.1
20	220	9.0						3.1
21	220	7.6						3.2
22	230	5.9						3.2
23	250	4.7					2.1	3.0

Time: 30.0°E.
Sweep: 2.0 Mc to 15.0 Mc in 8 seconds.

Table 27

Christchurch, New Zealand (43.5°S, 172.7°E) August 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300	5.4					2.7	2.6
01	290	5.2					2.8	2.6
02	300	5.0					2.8	2.7
03	290	4.7					2.7	2.7
04	285	4.3					2.6	2.8
05	280	3.9					2.6	2.8
06	270	3.8					2.6	2.8
07	260	5.7				1.7	2.8	3.0
08	240	9.2				2.5		3.1
09	240	10.8				3.0		3.1
10	240	11.8				3.3		3.0
11	240	11.9	250	5.4		3.5		3.0
12	250	12.4		5.5		3.5		2.9
13	240	11.5	240	4.8		3.5		2.9
14	250	11.4	230	4.7		3.3		2.9
15	240	11.0				3.0		2.8
16	250	10.6				2.6		2.9
17	250	10.1				1.8	2.9	2.8
18	240	8.9					2.6	2.8
19	250	8.3					2.6	2.7
20	260	7.0					2.7	2.7
21	270	6.3					2.8	2.7
22	280	6.0					2.7	2.7
23	280	5.7					2.7	2.6

Time: 172.5°E.
Sweep: 1.0 Mc to 13.0 Mc.

Table 28*

Slough, England (51.5°N, 0.6°W) July 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	271	7.6					2.8	2.4
01	281	7.0					1.5	
02	285	6.8					2.1	2.5
03	285	6.5					3.2	
04	292	6.5	260**	3.7**	107	1.7	3.3	2.5
05	304	6.9	247	4.1	102	2.3	3.9	2.5
06	335	7.2	218	4.8	104	2.9		2.5
07	333	7.7	210	5.1	101	3.2		
08	370	7.5	208	5.5	101	3.5	4.8	2.5
09	352	8.0	202	5.7	100	3.7		
10	379	8.0	206	5.7	100	3.8	4.6	2.5
11	395	8.0	204	5.9	100	3.9	5.4	
12	407	7.9	208	5.9	100	3.9	5.0	2.5
13	412	7.8	209	5.9	100	3.9	4.6	
14	393	7.8	211	5.9	101	3.9	4.4	2.5
15	394	7.9	214	5.8	103	3.8	3.8	
16	369	7.6	213	5.6	101	3.6		2.5
17	332	7.8	219	5.2	102	3.3		
18	285	8.0	226	4.8	105	2.9		2.6
19	250	8.2	240**		109	2.3	3.7	
20	256	8.0			130	(1.9)**	3.8	2.6
21	258	8.2					3.3	
22	266	8.1					2.6	2.5
23	271	7.9					2.5	

Time: Local.
Sweep: 0.5 Mc to 16.0 Mc in 4 minutes.
*Average values except f°F2 and fEs, which are median values.
**Less than three observations.

Table 29

Lanchow, China (36.1°N, 103.8°E) July 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	360	9.0					4.8	2.3
01	360	8.4					4.7	2.3
02	360	8.2					4.3	2.3
03	360	8.0					4.0	2.2
04	360	7.7					3.8	2.3
05	360	7.8					4.2	2.3
06	320	8.0					4.0	2.4
07	320	10.0			140	3.2	5.1	2.4
08	360	10.2	275	5.5	140		5.8	2.3
09	390	10.2	280	6.2	130		6.4	2.3
10	430	10.6	265	6.2	140		6.2	2.2
11	465	11.0	280	6.7	140		6.7	2.2
12	480	(11.0)	280	6.2	130		6.4	2.3
13	440	11.0	280	6.6	130		6.8	2.3
14	440	11.5	280	6.4	130		6.4	2.4
15	420	11.0	280	6.4	140		6.4	2.3
16	400	10.4	260	5.8	130		5.9	2.3
17	400	10.7	260	5.6	140		5.2	2.4
18	360	10.5	280		140		4.6	2.4
19	340	9.4					4.6	2.4
20	(340)	(9.3)						(2.4)
21	(350)							
22	360	9.4					4.6	2.2
23	360	9.2					4.9	2.2

Time: 105.0°E.
Sweep: 2.4 Mc to 16.0 Mc in 15 minutes, manual operation.

Table 30

Tokyo, Japan (35.7°N, 139.5°E) July 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300	9.2					5.2	2.5
01	295	8.8					6.1	2.7
02	280	8.2					4.9	2.7
03	270	7.9					4.0	2.7
04	285	7.9					3.8	2.6
05	280	8.0			110	2.2	3.0	2.6
06	290	9.4	245		100	2.7	4.2	2.8
07	290	9.5	235		100	3.2	5.7	2.8
08	320	9.0	240		100	3.6	7.0	2.7
09	370	9.1	205	5.8	100	4.0	7.4	2.5
10	390	9.2	200	5.8	100	4.0	8.4	2.5
11	390	9.8		5.8	100	4.0	8.2	2.6
12	390	10.2		5.6	100	4.1	9.0	2.6
13	380	10.1	220	6.2	100	4.1	8.2	2.6
14	360	9.8	230	5.5	100	4.1	8.2	2.7
15	370	9.4	240	5.7	100	4.0	5.6	2.6
16	360	9.4	240	5.5	100	3.7	5.6	2.7
17	330	9.2	245		100	3.3	6.2	2.7
18	300	9.2	240		100	2.6	5.1	2.8
19	265	8.8					4.6	2.8
20	270	8.6					4.6	2.6
21	300	8.8					4.6	2.5
22	300	9.0					4.8	2.6
23	300	9.0					5.0	2.6

Time: 135.0°E.
Sweep: 1.0 Mc to 15.0 Mc, manual operation.

Table 31

Yamakawa, Japan (31.2°N, 130.6°E) July 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	330	9.3					4.8	2.5
01	310	9.2					4.0	2.6
02	290	9.0					4.2	2.6
03	290	8.0					3.2	2.6
04	300	7.6					2.8	2.5
05	310	7.4					2.5	2.5
06	280	8.4			120	2.2	2.8	2.7
07	280	9.0			110	2.9	4.4	2.8
08	300	9.0	240		110		5.1	2.6
09	400	8.8	220		110	3.6	6.0	2.5
10	430	9.0	210				6.2	2.4
11	420	9.8	220	5.8		4.1	6.4	2.4
12	420	10.4	210	5.8	110	4.2	6.8	2.4
13	410	10.4	220	5.8		4.2	6.2	2.5
14	400	10.5				4.0	6.8	2.5
15	400	10.3	220	5.4			6.2	2.5
16	380	10.1	220		110	3.8	6.2	2.6
17	365	10.3			110	3.4	5.6	2.6
18	310	10.2			110	2.8	5.0	2.7
19	300	9.8				1.8	5.0	2.7
20	300	9.1					3.8	2.5
21	310	8.9					3.8	2.4
22	320	9.3					4.2	2.4
23	330	9.3					3.8	2.4

Time: 135.0°E.
Sweep: 0.6 Mc to 18.5 Mc in 15 minutes, manual operation.

Table 32

Fiji Is. (18.0°S, 178.2°E) July 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	220	7.2					2.6	
01	220	6.4					2.5	
02	220	5.8					2.5	
03	215	4.8					2.6	
04	220	3.5					2.5	
05	255	3.5					2.6	
06	260	4.3					2.6	
07	240	8.2			95	1.8	2.7	
08	220	12.6			95	2.8		
09	220	D			95	3.4	4.6	
10	220	D	210	5.6	95	3.7		
11	220	D	200	5.3	95	3.8		
12	260	12.4	190	7.0	95	3.8	4.8	
13	280	12.0	210	6.5	95	3.8	5.0	
14	285	11.6	205	6.5	95	3.7		
15	320	11.6	210	6.3	95	3.5		
16	230	11.6	220	5.7	95	3.2	4.6	
17	240	11.8			95	2.6	3.9	
18	230	11.2					4.0	
19	210	10.3					3.0	
20	235	9.3					2.9	
21	230	9.4					2.8	
22	230	8.9					2.6	
23	210	8.3					2.6	

Time: 180.0°E.
Sweep: Upper limit, 13.0 Mc.

Table 33

Rarotonga I. (21.3°S, 159.8°W) July 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		7.0						
01		6.5						
02		6.5						
03		5.9						
04		4.5						
05		3.9						
06		4.6						
07		9.5						
08		12.1						
09		13.1						
10		13.4						
11		12.8						
12		12.3						
13		11.7						
14		11.7						
15		11.6						
16		11.5						
17		11.7						
18		11.6						
19		10 5						
20		10.0						
21		9.9						
22		9.2						
23		8.1						

Time: 157.5 W°.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 34

Yamakawa, Japan (31.2°N, 130.6°E) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	330	9.4					4.8	2.5
01	320	9.4					4.7	2.5
02	300	8.5					4.4	2.5
03	300	8.2					3.0	2.5
04	300	7.5					2.8	2.5
05	315	7.4					2.5	2.5
06	290	8.3			120	2.3	2.6	2.6
07	285	9.0			110	2.9	4.5	2.7
08	305	8.9	230		110	3.5	5.4	2.6
09	390	9.3	230		110	3.6	7.6	2.4
10	410	9.6	250		110	3.9	7.6	2.4
11	430	9.7	215		110	4.1	7.0	2.4
12	420	10.2	210		110	4.0	6.3	2.4
13	400	10.4	240	5.6		4.2	6.4	2.5
14	400	10.7		5.6			6.2	2.4
15	400	11.0			110	4.2	6.4	2.5
16	390	10.8	240	5.2	110	3.9	6.2	2.5
17	360	10.7	230	4.8	100	3.6	6.2	2.6
18	320	10.4			110	2.9	5.0	2.6
19	300	9.6			120	1.8	4.9	2.6
20	300	9.0					5.0	2.5
21	320	8.6					4.0	2.4
22	350	9.1					4.1	2.4
23	350	9.0					4.8	2.4

Time: 135.0°E.
Sweep: 0 6 Mc to 18.5 Mc in 15 minutes, manual operation.

Table 35

Fiji Is. (18.0°S, 178.2°E) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	240	7.3					2.5	
01	225	6.8					2.6	
02	230	5.4					2.6	
03	220	4.6					2.6	
04	230	3.5					2.7	
05	260	3.6					2.7	
06	265	5.3					2.7	
07	250	10.0				1.8	3.5	
08	240	13.0			108	2.8	4.8	
09	235	D			108	3.4	5.0	
10	235	D	230	5.7	100	3.7	5.0	
11	260	D	220	6.4	100	3.9	5.1	
12	290	12.8	220	6.8	100	4.0	4.9	
13	320	12.4	215	6.6	100	4.0	5.3	
14	325	11.9	220	6 5	10	3.7	5.2	
15	260	12.0	225	6.0	110	3.5	4.8	
16	250	11.5	230		100	3.1	4.8	
17	250	11.7				2.4	4.8	
18	240	11.8					3.4	
19	230	10.6					3.0	
20	240	9.3					2.8	
21	240	8.9					2 6	
22	230	8.5					2.6	
23	250	8.3					2.6	

Time: 180.0°E.
Sweep: Upper limit, 13.0 Mc.

Table 36

Rarotonga I. (21.3°S, 159.8°W) June 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		7.2						
01		6.8						
02		6.2						
03		5.9						
04		5.7						
05		6.1						
06		6.8						
07		9.6						
08		12.5						
09		13.8						
10		13.6						
11		13.5						
12		12.8						
13		12.4						
14		12.5						
15		12.4						
16		12.5						
17		12.6						
18		12.7						
19		11.8						
20		11.2						
21		10.7						
22		9.2						
23		8.2						

Time: 157.5°W.
Sweep: 2.0 Mc to 16.0 Mc, manual operation.

Table 37

Fiji Is. (18.0°S, 178.2°E) May 1947

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fMs	F2-M3000
00	230	8.5					2.5	
01	230	7.2					2.5	
02	230	8.2					2.5	
03	210	5.8					2.5	
04	230	4.6					2.5	
05	260	4.3					2.6	
06	270	5.4					2.7	
07	290	10.4			100	2.3	3.1	
08	230	D			110	3.1	4.8	
09	230	D			110	3.5	4.6	
10	220	D			100	3.8		
11	300	D	215	7.2	100	4.0		
12	290	D	220	7.2	105	4.1		
13	305	D	220	7.3	100	4.0		
14	365	13.0	220	7.0	100	3.8	5.0	
15	360	13.0	220	7.0	100	3.6	4.8	
16	290	D	230		100	3.2	5.0	
17	290	12.8				2.5	5.1	
18	250	12.5					4.2	
19	250	12.0					3.8	
20	250	10.8					3.4	
21	250	11.1					2.9	
22	230	11.2					2.8	
23	230	10.0					2.5	

Time: 180.0°E.
Sweep: Upper limit, 13.0 Mc.

Table 38*

Clyde, Baffin I. (70.5°N, 68.6°W) December 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fMs	F2-M3000
00	284	2.5					3.5	
01	294	2.4					3.6	
02	298	2.5					3.5	
03	290	2.5					4.6	
04	287	2.5					3.7	
05	304	2.4					4.0	
06	297	2.5					4.0	
07	297	2.7					4.5	
08	294	2.8					5.4	
09	294	3.3					5.6	
10	289	3.7					3.7	
11	286	3.8					5.0	
12	281	4.0					3.9	
13	282	4.1					5.1	
14	287	4.0					5.2	
15	287	4.0					4.6	
16	287	3.7					4.8	
17	267	3.3					4.2	
18	262	3.2					3.8	
19	278	2.8					4.0	
20	280	2.9					4.0	
21	292	2.5					5.6	
22	286	2.4					4.5	
23	301	2.3					4.4	

Time: 75.0°W.
Sweep: 2.0 Mc to 16.0 Mc in 1 minute, supplemented by manual apparatus with low frequency limit 1.6 Mc.
*Average values.

Table 39*

Clyde, Baffin I. (70.5°N, 68.6°W) November 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fMs	F2-M3000
00	332	2.8					3.6	
01	313	2.8					3.5	
02	316	3.2					4.0	
03	298	2.7					4.0	
04	304	2.8					4.2	
05	309	2.7					4.2	
06	298	2.5					4.7	
07	309	2.8					5.2	
08	277	3.3					5.1	
09	258	3.5					4.6	
10	255	3.7					6.4	
11	256	4.0					6.0	
12	256	3.9					4.6	
13	257	4.1					4.2	
14	252	4.1					4.9	
15	261	4.1					4.8	
16	263	4.0					4.4	
17	281	3.8					5.1	
18	275	3.6					4.8	
19	280	3.5					4.8	
20	282	3.4					5.3	
21	298	3.1					4.1	
22	288	3.0					4.1	
23	326	2.8					3.8	

Time: 75.0°W.
Sweep: 2.0 Mc to 16.0 Mc in 1 minute, supplemented by manual apparatus with low frequency limit 1.6 Mc.
*Average values.

Table 40*

Great Baddow, England (51.7°N, 0.5°E) April 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fMs	F2-M3000
00		3.3						
01		3.2						
02		3.1						
03		2.9						
04		2.7						
05		3.0						
06		3.8						
07		4.5						
08		4.9						
09		5.3						
10		5.6						
11		5.7						
12		5.6						
13		5.7						
14		5.7						
15		5.6						
16		5.7						
17		5.7						
18		5.9						
19		5.9						
20		5.7						
21		4.9						
22		4.2						
23		3.6						

Time: 0.0°.
*Average values.

Table 41*

Great Baddow, England (51.7°N, 0.5°E) March 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		3.1						
01		2.9						
02		2.8						
03		2.8						
04		2.5						
05		2.1						
06		2.9						
07		4.1						
08		4.8						
09		5.3						
10		5.8						
11		6.0						
12		6.3						
13		6.4						
14		6.4						
15		6.3						
16		6.2						
17		6.0						
18		6.0						
19		5.5						
20		4.7						
21		3.8						
22		3.3						
23		3.1						

Time: 0.0°.
*Average values.

Table 42*

Great Baddow, England (51.7°N, 0.5°E) February 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		2.9						
01		3.0						
02		2.9						
03		2.9						
04		2.5						
05		2.4						
06		2.3						
07		3.1						
08		4.7						
09		5.4						
10		5.8						
11		5.9						
12		5.9						
13		6.1						
14		6.0						
15		5.9						
16		5.9						
17		5.5						
18		4.7						
19		3.9						
20		3.1						
21		2.9						
22		2.9						
23		2.8						

Time: 0.0°.
*Average values.

Table 43*

Great Baddow, England (51.7°N, 0.5°E) January 1943

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		2.7						
01		2.7						
02		2.7						
03		2.5						
04		2.0						
05		2.1						
06		2.0						
07		2.1						
08		3.8						
09		4.8						
10		5.1						
11		5.4						
12		5.9						
13		5.5						
14		5.5						
15		5.2						
16		4.8						
17		4.2						
18		3.4						
19		2.9						
20		2.4						
21		2.4						
22		2.5						
23		2.7						

Time: 0.0°.
*Average values.

Table 44*

San Juan, Puerto Rico (18.4°N, 66.1°W) December 1942

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		3.6					4.3	
01		3.7					3.3	
02		4.0					3.1	
03		4.1					3.7	
04		4.0					3.9	
05		4.1					3.1	
06		4.1					3.6	
07		3.8					2.8	
08		3.4					4.8	
09		3.5					3.0	
10		3.8					3.6	
11	253	5.0		3.1		2.5	2.4	
12	252	6.5	234	3.6		3.0	3.1	
13	258	7.8	240	4.0		3.2	3.2	
14	247	8.0	234	4.3		3.5	3.7	
15	251	8.0	233	4.4		3.7	5.5	
16	256	7.3	226	4.4		3.7	5.8	
17	280	7.3	230	4.4		3.8	6.1	
18	273	7.7	234	4.4		3.7	5.8	
19	265	7.6	231	4.1		3.4	5.2	
20	252	7.2	238	3.8		3.1	5.4	
21	246	6.8	234	3.6		3.0	5.1	
22	232	6.0		3.1			4.9	
23	254	4.4					4.4	

Time: 0.0°.
*Average values.

Table 45*

San Juan, Puerto Rico (18.4°N, 66.1°W) November 1942

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fMs	F2-M3000
00		3.9					4.6	
01		4.0					3.3	
02		4.0					4.3	
03		4.1					3.1	
04		4.2					2.9	
05		4.1					2.4	
06		4.1					2.4	
07		3.8					2.4	
08		3.2					2.4	
09		3.1					2.4	
10		3.2					3.5	
11	254	5.4		3.1		2.4	2.4	
12	254	7.2	238	3.8		3.0	4.5	
13	258	8.0	236	4.2		3.4	3.4	
14	256	8.6	237	4.4		3.8	4.5	
15	258	8.5	242	4.5		3.9	5.1	
16	266	8.4	241	4.5		3.9	5.6	
17	263	8.5	248	4.4		3.9	4.7	
18	266	8.4	240	4.4		3.8	4.8	
19	262	8.3	232	4.2		3.5	4.4	
20	253	7.9	227	3.9		3.0	4.6	
21	245	7.4	230	3.6		2.5	4.1	
22	243	6.2		3.1			3.6	
23	263	4.9					4.3	

Time: 0.0°.
*Average values.

Table 46*

San Juan, Puerto Rico (18.4°N, 66.1°W) October 1942

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fMs	F2-M3000
00		4.2					3.5	
01		3.9					4.0	
02		3.9					4.6	
03		3.9					3.2	
04		3.9					4.0	
05		4.0					2.4	
06		4.2					3.3	
07		3.8					3.7	
08		3.3					3.9	
09		3.0					2.4	
10		3.2					2.4	
11	243	5.5		3.1		2.5	3.2	
12	254	6.6	221	3.6		3.0	3.4	
13	276	7.2	226	4.3		3.4	5.0	
14	283	8.2	232	4.4		3.7	6.7	
15	281	9.2	239	4.5		3.9	6.8	
16	272	9.8	238	4.5		3.9	6.1	
17	270	10.0	241	4.5		4.0	5.8	
18	266	10.3	233	4.4		3.8	6.0	
19	251	10.1	240	4.3		3.6	5.0	
20	249	9.3	234	3.8		3.4	4.4	
21	244	8.6	237	3.5		2.7	4.1	
22	240	7.2		3.1			3.7	
23	247	5.3					3.5	

Time: 0.0°.
*Average values.

Table 47*

San Juan, Puerto Rico (18.4°N, 66.1°W) September 1942

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fMs	F2-M3000
00		5.2					3.3	
01		4.2					2.6	
02		4.0					3.6	
03		3.8					3.7	
04		3.7					2.8	
05		3.7					2.4	
06		3.8					2.6	
07		3.5					3.2	
08		3.4					3.0	
09		3.4					2.9	
10		3.5					2.9	
11	236	5.2		3.2		2.4	2.9	
12	254	5.6	200	3.6		3.0	2.8	
13	284	6.0	202	4.2		3.4	3.8	
14	311	6.4	208	4.4		3.7	6.5	
15	336	7.0	218	4.5		3.9	5.2	
16	321	8.4	227	4.6		4.0	5.6	
17	301	9.0	238	4.5		4.0	5.2	
18	290	9.3	236	4.5		3.9	5.2	
19	280	9.6	233	4.3		3.8	5.3	
20	267	9.4	222	4.1		3.4	5.8	
21	255	8.9	220	3.8		3.1	4.5	
22	245	8.2	230	3.2		2.8	3.5	
23	238	6.9					2.8	

Time: 0.0°.
*Average values.

Table 48*

San Juan, Puerto Rico (18.4°N, 66.1°W) August 1942

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fMs	F2-M3000
00		5.9					5.4	
01		4.9					4.6	
02		4.4					4.3	
03		4.2					4.8	
04		4.2					4.7	
05		4.2					3.2	
06		4.1					3.1	
07		3.9					3.8	
08		3.5					3.5	
09		3.2					4.5	
10		3.6					4.8	
11	251	4.9		3.2		2.4	4.2	
12	281	5.3	200	3.9		3.0	5.6	
13	296	5.4	202	4.2		3.4	6.0	
14	348	6.0	202	4.4		3.7	7.3	
15	360	6.2	224	4.4		3.9	6.5	
16	355	7.2	232	4.4		4.0	5.9	
17	327	7.9	246	4.4		4.0	5.5	
18	310	8.4	245	4.4		4.0	5.8	
19	296	9.3	226	4.3		3.7	5.6	
20	280	9.2	210	4.1		3.5	5.6	
21	274	8.8	212	3.8		3.1	5.0	
22	256	8.4		3.3		2.4	5.1	
23	241	7.6					5.4	

Time: 0.0°.
*Average values.

Table 49*

San Juan, Puerto Rico (18.4°N, 66.1°W) July 1942

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	310	6.6					4.0	
01	310	6.0					3.3	
02	317	5.4					3.0	
03	328	5.0					2.8	
04	326	4.8					2.9	
05	315	4.8					3.9	
06	300	4.6					3.4	
07	307	4.1					3.1	
08	312	3.9					3.6	
09	300	3.6					4.4	
10	285	3.7		3.2			3.9	
11	270	4.6		3.4		2.4	3.5	
12	295	5.3	209	3.9		3.0	4.6	
13	322	5.6	202	4.2		3.4	5.0	
14	363	6.0	197	4.3		3.7	5.8	
15	346	6.6	197	4.4		3.8	7.2	
16	336	7.4	190	4.4		3.9	7.0	
17	338	7.9	200	4.5		4.0	6.0	
18	328	8.0	203	4.4		3.9	5.7	
19	321	8.1	202	4.4		3.7	6.2	
20	309	8.1	206	4.2		3.4	6.1	
21	301	8.0	217	3.9		3.0	5.3	
22	288	7.7	220	3.4		2.4	4.9	
23	292	7.1		3.1			4.4	

Time: 0.0°.
*Average values.

Table 50*

San Juan, Puerto Rico (18.4°N, 66.1°W) June 1942

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	294	7.0					4.1	
01	312	6.1					3.5	
02	316	5.6					3.2	
03	339	5.4					2.9	
04	306	5.3					2.8	
05	317	5.4					2.8	
06	276	5.0					2.5	
07	278	4.4					2.6	
08	276	4.1					3.9	
09	277	3.8					3.9	
10	262	4.3		3.5			2.8	
11	279	5.2		3.6		2.4	3.7	
12	295	5.9	195	4.0		3.1	4.3	
13	304	6.6	193	4.2		3.4	4.6	
14	334	6.7	197	4.4		3.7	5.3	
15	344	7.3	192	4.5		3.9	6.1	
16	344	7.9	205	4.6		4.0	5.7	
17	335	8.9	195	4.5		3.9	5.3	
18	338	9.1	208	4.5		3.8	6.1	
19	330	9.2	200	4.3		3.7	5.3	
20	323	9.5	210	4.1		3.3	5.2	
21	281	9.9	203	3.8		2.9	4.3	
22	283	9.4		3.5		2.4	4.3	
23	277	8.4		3.1			4.3	

Time: 0.0°.
*Average values.

Table 51*

San Juan, Puerto Rico (18.4°N, 66.1°W) May 1942

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00	300	7.6					4.8	
01	324	6.8					4.3	
02	335	6.5					5.3	
03	341	6.3					4.5	
04	328	6.3					4.7	
05	312	6.1					5.6	
06	292	5.8						
07	291	5.3					5.6	
08	282	5.0					6.6	
09	274	4.5					4.8	
10	258	5.0					5.6	
11	254	6.1	180	3.5			4.7	
12	269	6.5	195	4.2		3.2	4.6	
13	288	6.9	191	4.5		3.5	5.6	
14	333	7.4	188	4.7		3.9	5.6	
15	350	8.6	193	4.8		4.0	5.2	
16	349	9.7	203	4.8		4.1	5.6	
17	331	10.4	216	4.8		4.1	5.8	
18	326	10.8	209	4.8		4.0	5.7	
19	310	10.9	207	4.6		3.8	5.5	
20	300	11.0	198	4.3		3.5	6.3	
21	285	10.9	210	4.1		3.3	5.4	
22	271	10.5	220	3.6			5.3	
23	265	9.2					4.5	

Time: 0.0°.
*Average values.

Table 52*

San Juan, Puerto Rico (18.4°N, 66.1°W) April 1942

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		6.8					4.0	
01		6.5					6.4	
02		6.3					5.7	
03		6.3					3.8	
04		6.5					4.6	
05		6.3					3.5	
06		6.0					3.2	
07		5.5					3.6	
08		4.6					3.4	
09		4.0					3.5	
10		4.3					2.4	
11		5.9		3.8		2.5	4.6	
12		6.8		4.0		3.2	4.8	
13		7.5		4.4		3.3	6.0	
14		8.1		4.6		3.8	5.8	
15		9.2		4.9		4.0	6.0	
16		10.1		5.0		3.9	5.2	
17		10.6		4.9		4.0	5.6	
18		10.7		4.8		4.0	5.6	
19		10.5		4.7		3.8	4.8	
20		10.2		4.5		3.3	4.9	
21		10.2		4.1		2.9	5.2	
22		9.5		3.8		2.4	5.3	
23		8.0					4.4	

Time: 0.0°.
*Average values.

Table 53*

San Juan, Puerto Rico (18.4°N, 66.1°W) March 1942

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		5.6						
01		5.0						
02		4.8						
03		4.9						
04		5.0						
05		5.1						
06		5.0						
07		4.6						
08		4.1						
09		3.6						
10		3.2						
11		5.6		4.0		2.3		
12		7.3		4.1		3.0		
13		8.6		4.3		3.4		
14		9.9		4.6		3.7		
15		10.4		4.8		4.0		
16		10.8		4.9		4.1		
17		11.1		4.8		4.1	6.5	
18		11.2		4.7		4.1	5.0	
19		11.0		4.6		3.9	5.9	
20		10.9		4.3		3.6	5.2	
21		10.4		4.1		3.0	5.1	
22		9.2		3.8		2.4		
23		7.5						

Time: 0.0°.
*Average values.

Table 54*

San Juan, Puerto Rico (18.4°N, 66.1°W) February 1942

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		4.7						
01		3.9						
02		3.9						
03		4.0						
04		4.0						
05		4.2						
06		4.2						
07		4.3						
08		4.0						
09		3.8						
10		3.8						
11		4.9						
12		6.7		3.8		2.8		
13		7.5		4.2		3.2	8.5	
14		8.1		4.4		3.6	7.5	
15		8.7		4.6		3.8	5.8	
16		8.8		4.6		3.9	6.8	
17		8.9		4.6		3.9	10.5	
18		9.0		4.5		3.8	10.5	
19		8.9		4.4		3.6	5.7	
20		9.1		4.2		3.4	6.8	
21		8.9		4.1			7.9	
22		8.3		3.7			7.8	
23		6.6					6.1	

Time: 0.0°.
*Average values.

Table 55*

San Juan, Puerto Rico (18.4°N, 66.1°W) January 1942

Time	h'F2	f°F2	h'F1	f°F1	h'E	f°E	fEs	F2-M3000
00		4.7					5.0	
01		4.2					7.5	
02		4.0					6.8	
03		4.0						
04		4.0						
05		4.2						
06		4.2						
07		4.1					6.5	
08		4.0						
09		3.8						
10		3.8						
11		5.0		3.0				
12		6.8		3.4		2.7		
13		7.9		3.9		3.2	4.8	
14		8.2		4.3		3.5		
15		7.9		4.4		3.7		
16		7.7		4.6		3.8	5.0	
17		8.2		4.6		3.8	6.4	
18		8.3		4.4		3.7	6.4	
19		8.2		4.3		3.5	4.9	
20		8.1		4.0		3.2	5.8	
21		7.8		3.8		2.7	6.4	
22		7.0		3.4		2.6	5.2	
23		5.6					7.3	

Time: 0.0°.
*Average values.

TABLE 56

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

h'F2 (Characteristic), Km (Unit), October (Month), 1947

Observed at Washington, D.C.

Lat. 39.0°N, Long. 77.5°W

National Bureau of Standards (Institution)

Scaled by: E. J. W., J. M. C.

Calculated by: M. C. E., N. M.

75°W Mean Time

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(320)	(350)	300	330	300	290	300	300	280	270	270	280	340	340	350	S	250	270	230	250	260	250	260	300 K
2	300 K	420 K	350 K	(400) K	400 K	360 K	320 K	320 K	350 K	G K	G K	(550) K	530 K	520 K	(480) K	420 K	420 K	300 K	300 K	320 K	390 K	450 K	(400) K	(350) K
3	400 K	(340) K	(440) K	360 K	(340) K	300 K	300	250	240	230	230	240	250	(360)	330	280	250	290	240	230	240	260	260	260
4	280	300	290	270	270	250	300	260	250	250	(300)	260	(270)	(300)	340	330	270	260	250	230	300	300	230	230
5	260	260	250	240	250	240	(280) F	260	250	250	(280)	330	340	350	340	350	300	270	240	240	240	250	260	260
6	260	250	250	250	250	270	270	260	260	280	290	260	260	330	330	340	(330)	270	250	240	260	260	260	250
7	250	260	260	250	250	260	280	250	270	270	270	(300)	330	340	350	330	320	300	280	230	240	250	260	260
8	A	230	270	250	240	250	290	260	260	250	280	290	300	300	(280)	270	260	260	230	240	240	260	300	300
9	280	260	250	(260) C	(300) C	330	320	260	240	240	260	270	270	260	240	230	240	250	260	230	270 K	300 K	320 K	300 K
10	300 K	(320) K	400 K	400 K	280 K	370 K	360 K	260 K	250 K	240 K	220 K	200 K	210 K	(310) K	300 K	330 K	330 K	240 K	240 K	250 K	240 K	250 K	230 K	(310) S K
11	(350) S K	370 F K	(300) F K	270 F K	300 F K	230 F K	280 F K	250	250	240	230	240	230	230	230	230	240	250	220	220	230	250	300	270
12	280	290	(340) F	(300) F	F	300 F	300	250	240	220	210	230	220	250	240	250	230	230	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	230	230	240	280	260	270	250	230	240	230	230	250	240	270	230
14	240	260	350 F	C	C	C	C	C	C	230	240	260	250	240	250	260	250	260	240	230	220	250	240	260
15	300	(280) C	(270) C	(240) C	(270) C	(230) C	(240) C	(300)	(240) C	230	240	230	230	230	230	230	240	240	220	210	250	250	240	250
16	240	250	270	300	270	270	250	230	220	230	240	230	230	250	240	240	230	220	220	220	230	250	250	250
17	250	260	260	270	250	230	250	240	230	230	230	240	230	230	240	230	230	230	210	230	230	240	260	260
18	250	260	250	250	240	260	260	240	230	230	250	240	250	240	240	230	230	230	220	230	240	230	240	260
19	270	260	260	250	260	250	250	230	240	240	240	230	230	240	230	240	230	230	230	220	230	250	270	250
20	270	250	260	260	270	230	300	240	220	230	230	240	240	260	240	240	240	240	220	240	250	250	260	260
21	260	250	270	280	260	250	240	230	230	230	230	240	230	C	230	230	230	220	240	230	230	250	260	260
22	280	270	280	280	270	(320) A	(280) A	240	230	240	240	236	230	240	240	230	230	230	220	240	240	250	250	250
23	260	300	320	300	260	250	250	240	230	250	250	250	250	250	250	250	250	240	220	220	250	250	270	300
24	270	250	230	210	240	330	C	C	C	(230)	240	240	230	230	230	240	230	230	240	250	250	240	250	250
25	250	260	250	250	260	250	260	260	A	230	230	230	230	230	230	230	240	240	220	230	240	240	240	240
26	250	250	270	270	260	250	250	240	240	240	230	230	230	230	230	230	230	240	230	240	240	240	250	250
27	250	250	250	250	250	240	240	240	240	230	230	230	230	230	240	240	230	240	(230) A	A	(230) A	240	(250) A	240
28	250	250	250	240	240	240	250	250	230	230	230	230	230	(250)	230	240	240	240	250	240	240	250	250	250
29	250	250	240	240	240	240	250	240	230	230	230	220	230	230	230	240	230	240	240	240	220	250	250	250
30	240	240	240	240	250	(260) A	260	250	240	230	230	230	240	230	240	240	230	250	230	240	240	250	240	240
31	250	270	250	250	240	250	(250)	250	240	230	230	230	230	230	230	230	240	240	230	240	230	240	240	240
Median	260	260	265	260	260	250	265	250	240	230	240	240	230	250	240	240	240	240	230	230	240	250	250	255
Count	29	30	30	29	28	29	28	28	27	31	31	31	31	30	31	30	31	31	30	29	30	30	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE. 1946 O - 703518

TABLE 57

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°F2 (Characteristic), Mc (Unit), October (Month), 1947

Observed at Washington, D.C.

Lat. 39.0°N, Long. 77.5°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E. J. W., J. M. C.

Calculated by: N. M., M. C. E.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(5.8)J	5.9	6.0	5.7	(5.9)J	5.4	6.0	7.4	9.1	(10.2)J	12.0	12.1	12.0	(11.7)P	(11.4)J	S	S	(9.5)J	(10.0)S	(8.7)	(8.2)	(7.5)J	(7.2)J	(6.1)J K
2	(5.2)K	5.8 K	5.2 K	(3.9)F K	3.5 F K	3.4 K	4.8 K	6.4 K	(6.8)J K	G K	G K	7.6 K	7.7 K	7.8 K	(8.6)J K	(8.7)J K	8.6 K	8.6 K	7.8 K	(7.0)J K	C K	F K	(3.7)F K	(3.4)F K
3	3.1 F K	3.5 K	3.7 F K	4.2 F K	3.9 F K	3.4 F K	5.2 F	(9.3)	11.2	12.1	13.3	13.5	(13.5)	(12.3)F	12.4	12.6	11.6	[11.3]S C	(10.9)J	9.7	9.3	8.1	7.2	(6.6)J
4	5.9	5.8	5.7	5.8	(5.8)J U	(5.9)J U	(6.4)J	9.9	12.0	(12.5)P	(13.5)P	13.6	(13.6)P	(13.4)P	(12.8)P	(12.9)J	(12.7)J	[12.6]S C	(11.2)J	(9.8)	(9.8)P	(9.4)	8.2	(8.2)F E
5	(8.2)F	(7.4)F	(7.0)F	(6.7)F	(6.2)F	(5.6)F	(6.0)F	(9.7)P	11.5	13.0	13.1	(13.6)J	13.2	12.9	12.6	12.2	12.4	(11.6)P	[11.7]S C	9.7J	[9.1]S C	8.6J	(8.6)J	(8.6)J
6	(7.7)J	(7.2)J	(7.1)J	(6.9)J F	(6.2)J	5.7	(6.6)J	9.4	11.6	12.5	12.6	12.7	12.8	13.0	12.8	12.7	(12.7)	12.4	[11.2]S C	9.8	9.4	(8.1)J	8.2	7.9
7	7.9	7.4	7.3	(6.8)J	(6.1)J	5.7	(6.0)J	9.0	10.2	11.2	11.5	12.4	12.5	12.6	12.4	12.2	(12.7)J	(12.3)P	11.9	(10.5)S	10.0	(8.6)J	8.2	7.9
8	7.6	7.6	7.8	(7.1)J	(6.2)J F	(5.6)J	(5.9)J U	9.5	11.5	12.5	13.1	(12.8)J	(12.4)J	13.2	(12.8)J	13.0	(12.7)P	N S	N S	(9.6)P	(9.3)P	8.7	7.9	7.8
9	7.7	7.4	(6.6)J	6.0	(6.0)J	(6.2)J	(6.6)J	(8.7)J	8.7	9.0	10.8	12.5	12.6	12.9	12.2	11.5	11.6	10.4	10.0	9.3	7.6 K	(6.7)J K	5.4 F K	5.5 K
10	(5.4)J K	(3.2)F K	(3.3)F K	3.4 K	3.5 F K	3.4 F K	4.0 F K	5.7 K	7.5 K	8.0 K	9.8 K	9.4 K	(10.8)K	10.4 K	10.5 K	9.6 K	9.9 K	10.2 K	(9.8)P K	8.8 K	7.8 K	(7.1)J K	(5.6)J K	(5.9)Z K
11	(5.4)J K	F K	F K	K (3.1)F J	(3.3)F K	F K	K (4.1)J F	8.1	9.8	11.4	12.0	12.3	12.2	12.6	12.8	12.6	(12.3)P	(11.0)J	(9.4)P	(12)S	(9.6)J	(7.2)J	(5.6)J	5.9
12	(6.6)J	(4.6)J F	(4.1)F	(3.8)F	=	(3.3)F	4.3	7.8	9.4	(10.2)J	(10.7)P	11.8	12.5	12.5	12.6	11.9	C	C	C	C.	C.	C	C	C.
13	C	C	C	C.	C	C	C	C	C	11.5	12.4	12.8	(13.7)J	13.1	(13.7)J	(13.5)J	12.9	12.4	[10.5]C	(9.8)S	(8.7)J	7.9	7.6	7.8
14	(6.8)J	(5.0)J F	(3.4)F Z	C.	C	C	C	C	C	9.0	9.8	11.4	12.0	[11.9]C	(11.8)P	(11.6)S	[11.4]S C	(11.2)	[10.3]S C	(9.0)J	(8.1)J	6.8	(6.3)J	5.
15	4.7	(3.6)J F	3.3	3.4	(3.6)J	3.5	4.6	(7.4)C	(9.2)C	(10.4)P	11.4	11.7	12.7	(13.9)J	(13.2)J	13.0	[12.4]S C	(11.8)P	(9.7)P	7.7	7.7	7.6	(7.2)J	6.8
16	(5.7)J	5.1	4.7	4.0 Z F	3.5 F	3.1 F	4.0 F	7.7	(8.7)J	10.7	12.4	13.1	13.3	(13.0,	(13.0)	(12.5)	(12.4)	(10.4)	(9.5)	(9.2)	8.0	7.3	7.0	(7.0)J
17	(6.0)J	(6.0)J	(5.6)P	(5.4)J	(5.2)J	(5.2)J	(4.7)J	(7.8)	9.4	(10.3)J	12.2	12.5	(13.2)	(13.0)	(13.0)	(13.0)	12.5	(10.0)	(10.0)	(8.5)	7.9	7.4	6.9	7.2
18	(7.6)J	(6.7)J	(6.4)J	(6.0)J	(5.0)J	(4.9)J	(5.1)J	(8.0)J	(10.0)	(10.7)J	(12.0)J	12.6	(13.0)	(13.0)	(13.0)	(13.0)	(12.8)	[11.8]C	(10.8)	(9.4)	(9.0)	7.3	(5.7)	
19	(6.6)J	(6.4)J	(5.9)J	(5.6)	5.3	(5.3)	5.5	8.0	9.8	[11.3]S C	(11.6)	(13.0)	13.0	(13.2)	(13.0)	(13.0)	12.0	(10.5)	9.8	(9.0)S	7.8	7.5	7.4	7.2
20	(7.1)J	(6.7)J	5.2	4.7	(4.7)J U	4.1 Z	4.2	(8.7)	9.2	(11.0)	12.1	12.5	12.8	(12.4)P	(12.6)P	(12.1)S	S C	C	C	S C	(7.9)	(6.9)J	(7.0)J	(6.9)J
21	(7.2)J	(6.9)J	(6.3)J	(6.2)J	(6.3)J	(6.1)J	[7.2]C	8.3	(10.8)J	11.5	12.2	(13.2)	(13.3)P	[13.0]C	(12.7)P	13.1	12.5	C S	C	C	(7.7)J	7.6	7.2	7.3
22	6.9	6.4	5.9	6.2	5.9	(4.8)J F	5.6	7.5	(9.9)	(12.2)J	(12.7)J	(13.2)	13.0	13.6	12.9	(12.7)P	(11.0)	11.1	(7.3)	(8.9)J	7.7	7.2	7.3	6.8
23	6.4	6.0	5.9	(5.9)J	5.9	5.2 F	5.4 F	7.3	9.3	9.5	10.2	11.2	(11.8)	11.5	(11.5)	11.3	(11.0)	(10.9)J	(10.0)	9.0	8.4	6.7	6.4	(7.0)J
24	7.2	7.2	7.0	6.0	4.9	4.6	C	C	C	(13.2)C	(13.5)P	13.1	13.5	(13.4)	13.0	13.0	12.5	11.5	[10.5]K S	9.5	9.0	8.2	7.7	(7.3)J
25	(7.0)J	(6.8)J	(7.0)J	(6.7)J	5.9	5.5	(5.6)J	7.5	(10.8)P	12.0	(12.6)P	12.8	13.1	13.0	12.6	12.5	12.3	(11.3)S	[10.4]K S	(9.4)	9.2	8.4	7.8	7.6
26	7.0	6.7	(6.2)J	(6.5)J	(5.7)J	5.8	(6.2)J	9.0	12.5	12.8	13.1	(13.1)P	(12.8)P	(12.7)P	12.7	(12.6)B	(12.0)S	(11.6)S	[10.7]S C	(9.8)P	9.1	8.5	8.0	7.5
27	7.3	7.0	6.8	(6.3)J	5.9	5.4	5.4	9.0	12.3	13.0	13.1	13.5	(13.4)P	(13.4)P	(12.7)K S	(12.7)S	(12.3)P	N S	N S	(9.6)	(9.4)S	8.8	8.0	7.8
28	7.2	7.2	7.2	7.8	(6.1)J	5.5	5.4	9.0	11.5	12.6	(12.8)P	13.2	(13.4)P	13.2	(12.5)P	(12.3)	(11.8)	(10.5)	[10.1]S C	9.6	9.2	(8.1)J	8.0	8.0
29	7.6	7.2	(6.4)	(6.0)F E	5.4	(4.9)J F	(8.7)J		11.2	(12.4)P	12.7	12.9	13.1	12.9	12.6	12.4	(12.2)P	(11.6)P	(11.4)K	(9.8)P	9.2	8.6	8.1	7.6
30	7.2	7.0	6.3	5.6	5.0	4.8	5.0 V	8.9	11.4	12.4	(12.7)P	(12.9)P	(12.8)P	13.0	(13.0)	(12.6)	(12.6)	(10.2)	(10.2)	10.0	(9.4)	9.3	8.4	8.0
31	7.4	6.5	6.8	6.3	6.1	5.5	(5.8)J	(9.0)	12.5	14.0	(14.0)	(14.3)	15.5	14.6	14.0	(13.7)S	(12.9)J	(11.9)S	[10.9]K S	(9.8)J	(9.1)P	(9.5)S	9.2	8.6
Median	7.0	6.7	6.2	6.0	(5.8)	5.2	5.4	8.5	10.1	11.5	12.4	12.8	13.0	13.0	(12.7)	12.6	(12.4)	(11.2)	(10.2)	(9.4)	9.0	8.0	7.4	7.2
Count	30	29	29	29	28	28	28	28	28	31	31	31	31	31	31	30	28	26	26	28	29	29	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE 1946 O - 703319

TABLE 58

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°F2 (Characteristic), Mc (Unit), October (Month), 1947

Observed at Washington, D.C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E. J. W., J. M. C.

Calculated by: M. C. E., N. M.

Day	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2330
1	C	6.1	5.6	6.8	5.7	5.6	6.9	8.4	10.1	11.8	11.8	12.5	(12.3)	11.9	11.5	S	S	(9.2)^{J}	[9.1]^{S}	(9.1)	(7.4)^{J}	(7.0)^{J}	(7.8)	(5.1)$^{V}_{K}$
2	5.6^{K}	5.6^{K}	4.9^{K}	3.6$^{F}_{K}$	3.4$^{F}_{K}$	3.6$^{F}_{K}$	5.5^{K}	6.7^{K}	(6.9)$^{VB}_{K}$	C^{K}	7.2^{K}	(7.6)$^{V}_{K}$	7.6^{K}	8.3^{K}	(8.7)$^{V}_{K}$	(8.6)$^{V}_{K}$	(8.8)$^{V}_{K}$	(8.5)$^{V}_{K}$	(7.5)$^{V}_{K}$	(5.6)$^{V}_{K}$	F$^{S}_{K}$	F^{K}	(3.5)$^{F}_{K}$	(3.2)$^{F}_{K}$
3	F^{K}	3.4$^{F}_{K}$	4.1$^{F}_{K}$	4.3$^{F}_{K}$	3.6$^{FZ}_{K}$	3.9$^{F}_{K}$	7.0	10.0	11.7	12.8	13.5	(13.5)	(12.7)^{P}	(12.3)^{P}	12.3	(11.5)^{P}	(11.1)^{J}	S^{C}	S^{C}	(8.7)^{P}	8.2	7.7	(7.0)^{J}	5.9
4	5.9	5.9	5.8	5.5	(6.2)$^{V}_{U}$	(5.5)^{D}	8.2	(11.2)^{J}	12.0	13.0	13.6	13.7	(13.5)^{J}	(13.0)^{P}	12.9	[12.4]$^{S}_{C}$	(12.2)^{P}	[11.6]^{S}	9.8	(9.6)$^{S}_{J}$	(8.8)^{J}	(8.2)^{J}	(8.2)^{J}	(8.6)$^{U}_{F}$
5	(7.9)^{D}	(7.1)$^{V}_{F}$	(6.9)$^{U}_{F}$	(6.7)$^{U}_{F}$	5.8^{F}	(5.7)^{F}	7.7	11.0	18.0	14.0	(13.2)^{J}	13.1	12.8	13.0	[12.2]^{S}	(11.9)^{S}	[11.7]^{S}	(11.5)^{S}	(11.0)^{J}	(9.9)	(8.7)^{U}	9.1	[8.6]^{S}	(8.5)^{J}
6	[7.2]^{S}	(7.1)^{J}	(7.0)^{U}	(6.6)^{J}	(5.8)^{J}	(6.6)^{U}	7.9	10.0	12.2	12.7	12.4	(12.8)^{J}	13.0	(12.9)^{P}	12.8	(12.7)	C	C	(9.8)^{C}	9.5	(8.6)^{U}	(8.6)^{J}	8.3	8.0
7	7.6	7.4	7.0	(6.3)^{U}	(6.0)^{J}	5.5	7.2	9.5	(10.7)^{J}	11.3	12.0	(12.6)^{P}	12.6	12.5	12.3	12.4	S	S	(10.6)^{J}	(10.2)^{S}	9.6	8.2	8.0	7.8
8	7.7	7.6	7.6	(6.7)^{J}	(5.9)^{F}	5.9	7.9	(10.7)^{J}	12.3	12.9	13.2	13.0	12.8	(12.7)^{P}	(12.7)^{J}	(12.8)^{J}	(12.8)^{P}	[12.0]^{S}	N^{S}	9.5	9.1	(8.0)^{P}	7.7	7.8
9	7.6	7.1	6.1	6.0	(6.3)^{J}	6.2	[7.2]	8.7	8.6	9.6	12.2	(12.5)^{P}	12.5	(12.5)	12.2	12.8	10.4	10.4	10.0	8.2	6.8^{K}	5.6^{K}	5.5^{K}	5.5^{K}
10	(5.6)$^{JV}_{K}$	3.2$^{F}_{K}$	(3.7)$^{V}_{K}$	(3.7)$^{V}_{K}$	3.4$^{F}_{K}$	3.5^{K}	4.4^{K}	6.5^{K}	7.7^{K}	8.9^{K}	10.8^{K}	10.8^{K}	(10.8)^{P}	(10.6)$^{V}_{K}$	(10.0)$^{J}_{K}$	9.5^{K}	9.9^{K}	(9.8)$^{P}_{K}$	(9.0)$^{S}_{J}$	8.7^{K}	7.3^{K}	(6.8)$^{J}_{K}$	5.7^{K}	(4.9)$^{F}_{E}$
11	F^{K}	F^{K}	F^{K}	F$^{C}_{K}$	3.2$^{F}_{K}$	F^{K}	(6.0)$^{V}_{K}$	(8.8)^{J}	10.6	11.6	12.3	12.1	(12.3)^{P}	13.0	12.7	12.5	S	S	(9.4)	9.3	(8.5)^{U}	(6.3)^{J}	(5.9)^{J}	(6.2)^{J}
12	(5.6)$^{J}_{F}$	(4.0)^{F}	(3.8)^{F}	(3.8)^{F}	(3.8)^{F}	(3.8)^{F}	5.5	(8.3)^{U}	(9.9)^{D}	(10.7)^{J}	(10.6)^{J}	(12.7)^{U}	12.5	(12.7)^{C}	12.0	(12.8)	(11.3)^{C}	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	12.0	12.2	13.3	(13.0)^{D}	13.3	(13.6)^{J}	(13.0)^{P}	(12.3)^{P}	(11.8)^{S}	(9.7)^{P}	(8.6)^{U}	(8.5)^{J}	7.3	7.6	7.0
14	(6.0)$^{V}_{F}$	3.8^{F}	(3.2)^{F}	C	C	C	C	C	C	9.3	(10.7)^{D}	(11.6)^{D}	12.3	(12.3)^{P}	11.7	(11.0)	S^{C}	S^{C}	S^{C}	S^{C}	7.4	6.8	5.5	8.1
15	4.2	(3.4)^{J}	3.4	3.4	(3.6)^{J}	(3.4)	[5.7]^{C}	(8.0)^{D}	9.7	(10.6)^{J}	11.5	12.2	13.8	(13.4)^{D}	(13.9)^{D}	[13.1]$^{S}_{C}$	(12.3)	S^{C}	C	7.9	7.7	7.6	7.1	(6.8)^{J}
16	(5.6)^{D}	4.8	4.5^{Z}	3.9^{F}	3.2^{F}	3.2^{F}	(5.9)	(8.2)^{U}	10.3	12.5	(12.3)^{D}	(13.3)^{F}	(13.2)	(13.2)	(12.5)	(12.8)^{J}	(11.5)	[10.3]^{C}	9.2	8.0	7.8	7.4	7.0	(6.9)^{J}
17	(6.2)^{J}	(5.9)^{D}	5.7	(5.2)^{J}	5.7	(4.8)^{J}	(6.1)^{J}	9.7	(10.2)^{D}	11.8	12.4	12.6	(13.0)	13.2	13.2	(12.5)	(12.2)	(10.0)	(9.8)	(8.2)	7.7	7.2	7.0	6.9
18	6.7	(6.2)^{U}	(6.0)^{U}	(5.0)^{J}	(4.6)^{J}	(4.5)^{J}	(6.2)^{J}	(9.8)	(11.0)	12.0	12.5	12.6	(13.2)	13.5	(13.0)	(12.8)	12.5	[11.2]^{C}	(10.0)	(9.0)^{J}	(8.6)	7.8	7.3	7.6
19	(6.5)^{J}	(6.1)^{J}	5.4	5.5	5.4	5.0	(6.0)^{J}	(9.4)	(10.5)	(10.5)	(12.8)	12.8	13.0	13.0	(13.0)	13.8	(12.0)	[10.4]^{C}	(8.8)	(8.0)	(7.4)	7.5	7.3	7.0
20	(7.1)^{U}	(5.7)	4.8	4.4	4.2	4.1	(5.6)	8.8	[10.1]	11.4	12.5	12.6	(13.9)^{D}	(12.3)^{C}	12.5	(11.9)^{S}	S^{C}	C	S^{C}	C	(7.0)^{J}	7.6	(7.0)^{J}	7.0
21	(6.9)^{U}	(6.5)^{U}	(6.2)^{U}	(6.2)^{U}	(6.2)^{J}	(5.4)^{D}	6.8	(9.6)^{S}	11.4	(11.9)^{D}	(12.5)	(13.2)^{U}	C	C	(12.8)^{D}	(12.5)^{D}	[11.8]^{C}	C	(9.2)	(8.5)^{F}	(7.4)^{U}	7.3	(7.1)^{U}	6.9
22	6.6	(6.6)^{U}	(6.4)^{U}	(6.0)^{U}	5.6	5.4	(6.4)^{D}	8.9	10.7	12.3	(12.8)	13.0	13.5	13.3	(12.8)	(14.5)^{S}	(10.5)	(10.0)	9.3	8.0	7.5	7.5	7.0	6.8
23	6.0	5.8	6.0	5.9	5.4^{F}	5.3^{F}	6.0	7.8	9.3	(9.8)	[10.6]^{C}	(11.5)	(11.8)	11.5	(10.7)^{J}	11.3	11.5	10.5	(9.4)	(9.0)	7.2	6.4	6.4	7.2
24	(7.2)^{J}	7.0	6.6	5.4	4.6	C	C.	C	(12.2)^{J}	13.3	13.1	(13.2)^{U}	(13.4)	13.4	13.1	[12.8]^{S}	(11.4)^{J}	(10.7)^{J}	(9.8)^{P}	9.3	8.7	7.8	(7.4)^{J}	7.2
25	(6.9)^{U}	(6.8)^{U}	(6.9)^{U}	(6.2)^{U}	5.7	5.4	6.8	9.8	11.1	12.4	(12.7)	13.0	(12.8)^{D}	12.8	12.6	12.4	(11.3)	11.3	9.8	9.5	8.8	8.0	7.7	7.1
26	7.0	(6.2)^{U}	(6.3)^{U}	(6.1)^{J}	(5.9)^{J}	5.7	7.6	[10.1]^{S}	(12.7)^{D}	(13.0)^{D}	(13.3)^{D}	13.0	(12.9)^{D}	12.8	12.7	(12.2)^{D}	(11.7)^{D}	[10.6]$^{S}_{C}$	(9.6)^{D}	(9.5)^{D}	8.9	8.1	7.9	7.9
27	7.2	6.8	[6.4]^{C}	6.0	5.7	5.0	6.9	(10.5)^{D}	12.7	13.2	(13.3)^{D}	(13.0)^{D}	(13.5)^{D}	(13.2)	12.6	(12.6)	N^{S}	N^{S}	N^{S}	(9.5)	(9.0)^{S}	8.4	7.9	7.4
28	7.3	7.1	7.0	(6.6)^{J}	(5.8)^{J}	5.1	6.9	(10.8)^{J}	12.1	12.7	13.1	(13.4)^{D}	13.3	12.8	12.5	S^{C}	S^{C}	S^{C}	S^{C}	(9.3)^{D}	8.2	8.2	8.0	7.7
29	7.2	7.0	(6.5)$^{U}_{V}$	5.8	(5.0)$^{U}_{F}$	(4.9)$^{U}_{F}$	(6.7)^{J}	(10.4)^{U}	12.0	12.5	(12.8)^{D}	13.0	13.1	(12.8)^{D}	12.5	(12.0)^{D}	(11.7)^{D}	(11.5)	(10.5)^{M}	(9.3)^{D}	9.0	8.2	8.0	7.4
30	7.3	6.6	5.9	5.3	5.0	4.6	(6.4)^{J}	(9.9)^{S}	(12.2)^{C}	12.5	(12.8)^{D}	13.0	(12.8)	13.0	(12.8)	(12.6)	[11.4]^{C}	(10.2)	(9.8)	(9.2)	9.4	9.2	8.2	7.6
31	6.6	6.7	6.6	5.8	5.4	5.4	7.0	(11.0)^{J}	(13.0)	(13.6)	(14.2)	(14.0)	14.8	14.3	13.8	13.0	12.7	(11.6)^{S}	[10.7]^{S}	(9.8)^{D}	(9.2)^{J}	9.4	8.3	8.0
Median	6.9	6.2	6.0	5.8	5.4	5.1	6.8	9.6	11.0	12.0	12.5	13.0	13.0	12.8	12.6	(12.5)	(11.7)	(10.6)	(9.8)	(9.2)	8.5	7.7	7.4	7.4
Count	27	29	29	28	29	27	28	28	29	31	31	31	30	30	31	29	23	20	28	28	29	29	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE 1948 O - 703519

Form adopted June 1946

TABLE 59

Central Radio Propogation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

h'F1 (Characteristic), Km (Unit), October (Month), 1947

Observed at Washington, D.C.

Lat 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E. J. W., J. M. C.

Calculated by: M. C. E., N. M.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	260	240	230	230	220	(230)	230	220H	230	250	250	Q					
2							Q K	280 K	280 HK	220 K	220 K	(230) K	(240) K	230 K	(240) K	(240) K	240 K	260 K						
3								Q	A	Q	220	220	210	(240)	230	240 H	230	240	Q					
4							260	240	230	220	200 H	200 H	(230)	220 H	220 H	230	240	240	230	Q				
5							240	240	230	200	230	220 H	230	220	220 H	240	230	240	Q					
6								240	230	230	210 H	210	200	210 H	220	230	240	250	Q					
7								230	230	230	220	220	220	230	230	230	250	250	Q					
8							260	240	230	230	230	220	230	230 H	220 H	230	250	240	Q					
9								Q	Q	Q	220 H	210 H	250	230	230	Q								
10								Q K	Q K	Q K	Q K	Q K	Q K	210 K	220 K	230 K	250 K	Q K	Q K					
11								Q	240	220	200	200	Q	Q	Q	Q	Q	Q						
12								Q	Q	Q	Q	210	Q	230	230	230	Q	C						
13										Q	210	200	210	230	240	240	Q	Q						
14										Q	210	200	220	Q	(230)	220	230	Q	Q					
15									(200) C	Q	200	Q	210	Q	Q	Q	Q	Q	Q					
16								Q	Q	220	220	200	Q	230	230	220	Q	Q						
17								Q	Q	Q	Q	220	220	Q	230	Q	Q	Q						
18								Q	Q	210	200	Q	B	230	220	Q	Q	Q						
19								Q	Q	220	230	Q	220	230	Q	230	Q							
20								Q	Q	Q	210	230	230	(240) C	Q	Q	Q	Q	Q					
21								Q	Q	Q	Q	220	220	C	Q	Q	Q	Q						
22								Q	Q	220	220	Q	Q	230	230	Q	Q	Q						
23									Q	230	220	220	230	230	230	230	Q	Q						
24							C	C	C	Q	Q	180 H	Q	Q	Q	Q	Q	Q						
25								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q					
26								Q	Q	220	Q	Q	Q	Q	Q	Q	Q	Q						
27								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q						
28								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q						
29								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q					
30								Q	Q	210	200	220	200	220	Q	Q	Q	Q						
31								Q	Q	Q	Q	Q	Q	220	Q	Q	Q	Q						
Median								240	230	220	220	220	220	230	230	230	240	245						
Count							3	7	9	15	20	20	18	20	18	15	10	8						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1946 O - 703519

TABLE 60

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°FI (Characteristic), Mc (Unit), October (Month), 1947

Observed at Washington, D.C.

Lat. 39.0°N, Long. 77.5°W

75°W Mean Time

Notional Bureau of Standards (Institution)

Scaled by: E. J. W., J. M. C.

Calculated by: M. C. E.,

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	L	L	L	L	L	L	L	L	L	L	L	Q					
2							Q K	L K	L K	K J (5.2) H	5.3 K	5.4 K	(5.6) K	5.6 K	5.6 K	5.4 K	1 K	L K	Q K					
3								Q	A	Q	L	L	L	L	L	L	L	L	Q					
4							L	L	L	L	L	L	L	L	L	L	L	L	L	Q				
5							L	L	L	L	L	L	L	L	L	L	L	L	Q					
6							Q	L	L	L	L	L	L	L	L	L	L	L	Q					
7							Q	L	L	L	L	L	L	L	L	L	L	L	Q					
8							L	L	L	L	L	L	L	L	L	L	L	L	Q					
9							Q	Q	Q	Q	L	L	L	L	L	Q								
10								Q K	Q K	Q K	Q K	Q K	Q K	L K	L K	L K	L K	Q K	Q K					
11								Q	L	L	L	L	Q	Q	Q	Q	Q	Q						
12								Q	Q	Q	Q	L	Q	L	L	L	Q	C						
13								Q	Q	Q	L	L	L	L	L	L	Q	Q						
14								Q	Q	Q	L	L	L	Q	L	L	L	Q	Q					
15								Q	L	Q	L	Q	L	Q	Q	Q	Q	Q	Q					
16								Q	Q	L	L	L	Q	L	L	L	Q	Q						
17								Q	Q	Q	Q	L	L	Q	L	Q	Q	Q						
18								Q	Q	L	L	Q	B	L	L	Q	Q	Q						
19								Q	Q	L	L	Q	L	L	Q	L	Q							
20								Q	Q	Q	L	L	L	L	Q	Q	Q	Q	Q					
21								Q	Q	Q	Q	L	L	C	Q	Q	Q	Q						
22								Q	Q	L	L	Q	Q	L	L	Q	Q	Q						
23								Q	Q	L	L	L	L	L	L	L	Q	Q						
24							C	C	C	Q	Q	L	Q	Q	Q	Q	Q	Q						
25								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q					
26								Q	Q	L	Q	Q	Q	Q	Q	Q	Q	Q						
27								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q						
28								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q						
29								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q					
30								Q	Q	L	L	L	L	L	Q	Q	Q	Q						
31								Q	Q	Q	Q	Q	Q	L	Q	Q	Q	Q						
Median																								
Count																								

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 768519

TABLE 61

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1948

IONOSPHERIC DATA

h' E (Characteristic), Km (Unit), October (Month), 19 47

Observed at Washington, D.C.

Lat. 39.0°N, Long. 77.5°W

75°W Mean Time

Notional Bureau of Standards (Institution)

Scaled by: E.J.W., J.M.C.

Calculated by: M.C.E., N.M.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1								120	110	100	(100)	100	100	100	100	100	100	110							
2								110 K	100 K	100 K	100 K	100 K	100 K	100 K	110 K	100 K	100 K	130 K							
3								100	100	90	100	100	100	100	100	100	110								
4							S	130	110	100	100	100	(130)	120	110	100	110	120	S						
5								130	100	100	(120)	100	100	100	110	100	100	120							
6								120	110	110	110	110	110	100	100	100	100	A							
7								A	120	110	110	110	100	110	110	110	110	100							
8							S	120	110	100	120	110	120	110	110	120	110	120							
9								120	110	100	100	(120)A	110	110	100	100	110	120							
10								120 K	110 K	100 K	100 K	100 K	100 K	120 K	100 K	100 K	110 K	120 K							
11								120	110	110	100	100	100	110	110	110	110	(140)							
12								(130)C	110	100	110	110	(120)B	110	110	110	C	C							
13										100	110	100	(110)B	100	(100)	110	120	B S							
14										100	110	120	120	C	120	120	120								
15									110	110	120	110	(120)D	(120)B	(120)D	110	110	(140)S							
16								110	110	110	100	100	B	120	120	120	120	B							
17									110	120	120	110	120	120	100	110	110	130	110						
18								130	100	110	120	B	B	120	120	B	120	B							
19								120	110	120	110	120	110	120	120	110	110								
20								110	110	110	100	110	110	110	130	120	B	B							
21								A	110	(100)B	100	100	A	C	120	120	120								
22								110	110	100	100	B	B	110	100	100	100	100							
23								120	100	100	110	110	110	110	110	100	100	110							
24							C	C	C	(100)	(130)B	100	110	110	120	110	(120)B	(120)B							
25								110	100	100	(120)B	(120)B	(120)B	(100)B	A	(130)B	110	(100)B							
26								120	110	(120)B	A	(110)B	B	B	(120)B	100	(130)A	(110)S							
27								(130)	110	110	(110)B	B	(120)B	(120)B	(120)B	110	120	A							
28								(140)A	100	100	100	110	(120)B	120	100	110	100	(140)S							
29								(120)S	110	110	110	100	(120)B	100	100	(120)S	(110)S	(120)S	A						
30								(130)A	100	110	100	(120)B	100	110	100	110	120	100	130						
31								100	110	100	110	110	110	(120)D	(120)A	(120)B	(120)A	B							
Median								120	110	100	110	110	110	110	110	110	110	120							
Count								24	28	31	30	28	26	28	30	30	29	19							

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 785519

TABLE 62

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

f°E (Characteristic), Mc (Unit), October (Month), 1947

Observed at Washington, D. C.

Lat. 39.0°N, Long 77.5°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: E. J. W., J. M. C.

Calculated by: M. C. E., N. M.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								(2.5)	3.2	3.6	3.9	4.0	(4.2)	(4.1)	3.7 H	3.6	3.2	2.6						
2								(2.8) K	(3.1) H K	(3.5) K	3.8 K	3.9 K	4.0 K	(3.7) K	3.7 K	3.6 K	3.2 K	2.4 K						
3								2.6	[3.3] A	(3.6)	(3.8)	(4.0)	4.0	4.0	3.9	3.7	3.2	(2.5) S						
4							S	(2.4) S	3.2	A	A	(3.9)	(4.0)	(4.0)	3.8	A	(3.1)	(3.7)	S					
5								(2.6)	(3.1) F	[3.5] A	(3.9)	(3.7) H	(4.0)	(3.7)	(3.7) H	3.6	3.2	(2.6) F						
6								2.7	3.1	(3.6)	3.9	3.9	4.0	3.9	(3.7)	(3.7)	(3.7) F	A						
7								A	3.1	(3.5)	3.9	4.0	(3.9)	3.8	3.7	(3.5) S	(3.0) A	A						
8							S	(2.5)	3.2	(3.5)	(3.9) F	4.0	(4.0)	(3.9)	3.8	3.4	2.9	(2.2) H						
9								2.3 H	(2.9)	3.4	[3.5] A	3.6	(3.9)	3.6	3.6	3.4	2.7	2.1						
10								2.4 K	2.9 K	3.2 K	(3.5) K	3.7 K	[3.8] A K	(3.7) K	3.5 K	3.2 K	2.9 K	(2.1) K						
11								2.2	(2.8)	3.2	3.6	3.6	[3.6]	3.6	3.5	(3.2)	2.7	(2.0) H						
12								2.2 B	2.7	3.1	3.3	3.6	(3.7) B	3.6	3.4	3.1	C	C						
13								C	C	(3.2) C	(3.3) A	[3.4] A	B	(3.5)	3.5	3.2	(2.9)	B						
14								C	C	(3.1)	[3.5] B	(3.7)	(3.6)	[3.5] C	(3.4)	3.1	2.5							
15								C	(2.6)	(3.3)	(3.3)	[3.4] B	(3.4) B	(3.5) B	(3.4)	3.1 H	2.8	(2.0) H						
16								A	2.1	[2.5] B	(2.9)	B	B	B	3.5	2.8	B	B						
17									(2.6)	A	B	(3.5)	[3.9] B	B	(3.3)	3.2	2.8	B	B						
18								2.0	2.8	(3.2)	B	B	B	B	3.6	[3.7] B	(2.8)	B						
19								1.7	[2.6] A	3.0	(3.6)	B	B	B	B	(3.5)	B							
20								(1.9) H	2.8	[3.3] B	(3.6)	(3.7)	(3.9)	3.8	(3.6)	(3.3)	B	B						
21								A	A	B	(3.0)	A	B	C	(3.5)	3.3	A							
22								A	(2.6)	A	A	B	B	3.8	3.6	3.3	2.7	(2.0)						
23								2.2	(2.9)	3.2	3.4	3.6	[3.6] B	B	3.7	3.0	A	B						
24							C	C	C	B C	(3.2)	(3.5) B	(3.9)	(3.8)	3.6	3.3	B	B						
25								(2.0)	A	A	B	B	B	B	3.6	3.3	2.7	B						
26								(2.2)	(2.6) H	(3.2) H	3.8	(3.5)	B	B	B	3.4	2.8	(1.8) S						
27								(1.9) H	3.0	B	(3.7) B	(3.9) B	(3.9) B	(3.8) H	(3.6) B	(3.4)	2.7	A						
28								(2.0) H	(2.9)	3.4	3.7	3.7	3.8	3.8	(3.6)	3.2	2.5	(1.7) H						
29								(1.8) H	2.8	(3.2) H	[4.0] B	(3.7) B	3.8	3.8	3.6	2.8 H	2.5 H	B	A					
30								1.9 H	[2.6] A	3.3	3.5	3.4	(3.6) A	3.7	3.4	3.1	B	B	B					
31								2.1	(2.8)	3.2	B	B	B	3.8	3.5	3.2	2.5	B						
Median								2.2	(2.8)	(3.2)	(3.6)	3.7	(3.9)	3.8	3.6	3.3	2.8	(2.1)						
Count								22	26	24	25	24	22	23	29	30	23	13						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 702519

TABLE 63

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

Es (Characteristic), Mc, Km (Unit) October (Month), 19 47

Observed at Washington, D.C.

Lat. 39.0°N, Long. 77.5°W

75°W Mean Time

National Bureau of Standards (Institution)

Scaled by: F.J.W., J.M.C.

Calculated by: J.T.D., E.H.L.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								3.4/120							(3.4)90									
2									3.4/130	3.8/130		5.6/120											2.8(150)	
3					4.2/100				6.0/110								5.8/130							
4								2.0/100	3.4/110	3.4/120	3.9/110		(3.6)110	3.4/100		3.6/130	4.2/110	3.4/130						
5								2.2/110	4.4/130	3.8/130	3.6/100			4.2/120			4.0/130							
6																		2.6/100						
7				1.5/110				2.3/120									3.6/120	2.6/130						
8	3.2/110															4.2/120								
9												3.7/120						2.3/150						
10				4.6/130									3.8/120	(3.0)100										
11																								
12																	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C		3.6/120	3.4/110												
14				C	C	C	C	C	C															3.0/100
15																								
16								2.3/120								3.2/120								
17										4.3/120														
18																				2.3/120				
19									2.6/110														2.2/110	
20																								
21								2.2/120	5.8/120		3.2/120	3.9/110	3.4/110	C			3.1/120							
22						3.2/110	3.6/110	2.1/120	3.2/110	4.4/110	3.9/100				3.8/120	3.6/120								
23			2.3/110	3.1/100	3.2/100					4.4/100						3.2/120	4.5/100		2.0/110	3.3/100	1.8/100			
24					1.7/120	4.0/120	C	C	C										1.9/110	1.8/100				
25									4.9/100	4.2/110					3.0/110									
26											3.4/120						2.2/100		1.7/120					
27																		2.2/130	3.4/110	7.9/110	3.2/110		3.4/100	
28								1.8/100																
29		2.0/100	1.5/110																2.0/120				1.8/100	
30						3.2/120		2.0/120	3.9/110				4.0/100							1.8/110	1.8/100			
31															2.8/100		2.2/100							
Median	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Count	30	30	30	29	29	29	28	28	28	31	31	31	31	30	31	31	30	30	30	30	30	30	30	30

** MEDIAN f_{E_s} LESS THAN MEDIAN $f^{\circ}E$, OR LESS THAN LOWER FREQUENCY LIMIT OF RECORDER.

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U.S. GOVERNMENT PRINTING OFFICE: 1948 O - 705515

TABLE 64

Central Radio Propagation Laboratory, National Bureau of Standards Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

F2 - M 1500 (Characteristic), (Unit) October (Month), 19 47

Observed at Washington, D.C.

Lat. 39.0°N, Long. 77.5°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E. J. W., J. M. C.

Calculated by: M C.E., N. M.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(1.7)J	1.6	1.7	1.5	(1.6)J	1.7	1.8	1.9	2.0	(2.2)J	1.9	(1.8)	1.8	1.7	(1.8)J	S	S	(1.9)J	1.8	(2.0)	(1.7)	(1.8)J	(1.8)J	1.9K
2	(1.5)K	1.4K	1.5K	(1.4)FK	1.5K	1.6K	1.9K	2.0K	(1.8)JK	G K	G K	1.5K	1.5K	1.5K	(1.6)JK	(1.7)JK	1.7K	1.7K	1.7K	(1.6)JK	C K	F K	(1.6)FK	(1.8)FK
3	1.6FK	(1.5)FK	1.4FK	1.5FK	1.6FK	1.6FK	1.8F	(2.0)	2.2	2.1	2.0	1.9	(1.8)	(1.8)F	1.9	1.7	1.9	S C	N S	1.8	1.7	1.9	1.8	(1.7)J
4	1.7	1.6	1.7	1.7	(1.6)JU	(1.7)JU	(1.9)J	2.1	2.1	(2.0)F	(1.9)P	1.8	(1.8)P	(1.8)P	(1.8)P	(1.8)J	(1.7)J	S C	N S	(1.8)	(1.8)P	(1.7)	1.7	(1.7)JF
5	(1.9)JF	(1.9)JF	(2.0)JF	(1.9)JF	(1.9)F	(1.9)F	(1.9)JF	(2.2)P	2.0	1.9	1.9	(1.8)J	1.8	1.8	1.8	1.8	1.8	(1.9)P	C	(1.8)J	S C	(1.8)J	(1.7)J	(1.9)J
6	(1.9)J	(2.0)J	(1.9)J	(2.0)JF	(1.7)J	1.7	(1.7)J	2.1	2.0	2.0	1.9	1.8	1.9	1.8	1.8	1.8	(1.8)	(1.8)	C	1.8	1.8	(1.9)J	1.9	1.9
7	2.0	2.0	2.1	(1.8)J	(1.8)J	1.6	(1.9)J	1.9	2.2	2.0	2.0	1.8	1.8	1.8	1.8	1.9	(1.8)J	(1.8)P	1.8	(1.8)S	1.8	(1.8)J	1.8	1.8
8	1.7	1.7	1.8	(1.9)J	(1.7)JF	(1.8)J	(2.2)JU	2.1	2.2	2.0	2.0	(2.0)J	(1.9)J	1.8	(1.8)J	1.8	(1.9)P	N S	N S	(1.9)P	(1.8)P	1.8	1.6	1.7
9	1.8	1.7	(1.7)J	1.5	(1.5)J	(1.6)J	(1.7)J	(1.9)J	2.0	2.0	1.7	1.8	1.8	1.9	1.8	1.9	1.9	2.0	2.0	1.8	1.7K	(1.6)JK	1.5FK	1.8K
10	K(1.9)JU	1.4FK	(1.6)FK	1.5K	1.5FK	1.5FK	1.5K	1.8K	2.1K	2.1K	1.8K	2.0K	1.9K	1.7K	1.9K	1.8K	1.9K	1.9K	(2.0)PK	1.8K	2.0K	(1.8)JK	(1.8)JK	(1.6)JK
11	(1.6)EK	F K	F K	K(1.9)JF	(1.6)FK	F K	K(2.0)JF	2.3	2.2	2.1	2.0	2.0	2.0	2.0	2.0	2.0	(2.0)P	(2.0)J	(2.2)P	(1.9)S	(1.9)J	(1.9)JU	(1.6)J	1.7
12	(1.7)J	(1.8)JF	(1.6)F	(1.6)F	F	(1.8)F	2.1	2.0	2.4	(2.2)J	(2.1)P	2.0	2.0	2.0	2.0	1.9	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	2.2	2.1	2.1	(2.0)J	1.9	(2.0)J	(2.0)J	2.2	1.9	C	(1.9)J	(1.9)J	1.9	1.9	2.1
14	(1.9)JF	(1.9)JF	(1.6)F	C	C	C	C	C	C	2.1	1.8	2.1	2.1	C	2.0	(1.9)J	S C	(2.1)	S C	2.1	(2.0)J	1.9	(1.9)J	1.6
15	2.0	2.0	(1.7)	(2.0)	(2.0)J	2.3	2.1	(1.8)C	(2.5)C	(2.2)P	2.1	2.1	2.0	(2.0)J	(2.0)J	2.0	S C	(2.1)P	(2.4)P	2.0	1.9	1.9	(2.0)J	1.8
16	(2.1)J	1.8	1.8	1.7FK	1.7F	1.8F	2.0F	2.3	(2.1)J	2.2	2.1	2.1	2.1	(2.1)	(2.2)	(2.2)	(2.2)	2.4	2.4	2.2	2.1	1.9	1.9	(2.1)J
17	(1.9)J	(1.7)J	(1.9)P	(1.7)J	(1.9)J	(1.9)J	2.0	(2.2)	2.2	(2.3)J	2.2	2.2	(2.0)	(2.2)	(2.2)	(2.1)	1.8	(2.3)	(2.2)	(2.2)	(2.2)	2.0	1.9	1.9
18	(1.9)J	(1.9)J	(1.9)J	(1.9)J	(2.0)J	(1.8)J	(2.0)P	(2.2)J	(2.2)J	(2.2)J	(2.1)J	2.7	(1.9)	(2.1)	(2.1)	(2.0)	(2.0)	C	(2.1)	(2.0)	(2.1)	(2.1)	1.9	2.0
19	(1.8)J	(2.0)J	(1.8)J	(1.8)	1.8	(1.8)	1.9	2.1	2.3	S C	(2.2)	(2.1)	(2.1)	(2.0)	(1.9)	(1.8)	2.1	(2.2)	2.4	2.0	2.0	1.9	1.9	1.9
20	(1.8)J	(1.7)J	1.9	1.8	(1.8)JV	1.8E	1.9	(2.1)	2.1	(2.2)	2.8	2.8	2.0	(2.1)P	(2.1)	(2.1)S	S C	C	C	S C	(2.0)	(2.0)J	(2.3)J	(1.9)J
21	(1.9)J	(1.8)J	(1.8)J	(1.7)J	(1.8)J	(1.9)J	C	2.1	(2.4)J	2.1	2.2	2.1	(2.0)P	C	2.0	2.0	2.1	C S	C	C	(2.0)J	1.9	1.9	1.8
22	1.7	1.7	1.8	1.7	1.6	(1.7)JF	1.8	2.4	(2.3)	(2.0)J	(2.0)J	(2.0)	2.1	1.9	1.9	(2.0)P	(2.1)	2.1	(1.9)	(2.1)J	1.8	1.9	1.8	1.8
23	1.9	1.8	1.6	(1.6)J	1.7	1.8F	1.9F	2.1	2.0	2.1	1.9	1.9	1.9	1.8	(1.7)	1.8	1.9	(1.9)J	2.1	2.0	1.8	1.8	1.6	(1.9)J
24	1.7	1.9	1.9	2.0	1.9F	1.7	C	C	C	(2.1)C	(2.0)P	2.0	1.9	(1.9)	1.8	1.9	1.9	2.0	N S	1.9	1.9	1.9	1.9	2.0
25	(1.9)J	(1.9)J	(1.9)J	(1.9)J	1.8	1.8	(1.8)J	2.4	(2.1)P	2.1	(2.1)P	2.0	1.9	1.9	1.9	1.9	1.9	(2.0)J	N S	(2.0)	1.8	1.8	1.9	1.7
26	1.7	1.9	(1.9)J	(1.7)J	(1.8)J	1.7	(1.9)J	2.0	2.1	2.2	2.1	(2.0)P	(1.9)P	(1.9)P	1.8	(1.8)B	(1.9)S	(1.8)S	S C	(1.9)P	2.0	1.9	1.9	1.9
27	1.8	1.9	1.8	(1.8)J	1.9	1.8	1.7	2.0	2.3	2.2	2.1	2.1	(2.0)P	(1.9)P	N S	(1.9)S	(2.0)P	N S	N S	2.0	(1.9)S	1.9	1.8	1.9
28	1.8	1.9	1.9	1.7	(1.9)J	2.0	1.9	2.1	2.2	2.2	(2.2)P	2.0	(1.9)P	1.8	(2.2)P	(1.9)	(1.9)	(1.8)	5 C	1.9	1.9	2.0	1.9	1.9
29	1.9	1.9	(2.0)	(2.0)JF	1.9	(2.1)JF	(2.0)F	(2.1)J	2.1	(2.1)P	2.2	2.0	2.0	1.9	1.8	1.8	(1.8)P	2.1	N	(1.9)P	2.0	1.9	2.0	2.0
30	1.9	2.0	1.9	1.9	1.9	1.8	1.8V	2.1	2.3	2.1	(2.1)P	(1.9)P	1.9	1.8	(1.8)	(1.8)	1.9	(2.1)	(2.1)	2.0	(2.0)	1.9	2.0	1.9
31	1.8	1.7	1.8	1.9	1.8	1.6	(1.7)J	(2.0)	(2.1)J	2.1	(2.1)	(1.9)	1.8	1.9	1.9	2.0	2.0	2.0	N S	(2.0)S	(1.9)P	(2.0)S	1.9	2.1
Median	1.8	1.8	1.8	(1.8)	1.8	1.8	1.9	2.1	2.2	2.1	2.1	2.0	1.9	1.9	1.9	1.9	1.9	(2.0)	2.1	(1.9)	1.9	1.9	1.9	1.9
Count	30	29	29	29	28	28	27	28	28	31	31	31	31	29	30	30	26	29	14	28	28	29	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1948 O 795519

TABLE 65

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

F2-M3000 (Characteristic), (Unit) October (Month), 1947

Observed at Washington, D.C.

Lat. 39.0°N, Long. 77.5°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E. J. W., J. M. C.

Calculated by: N. M., B. C. V.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	(2.6)J	2.6	2.5	2.3	(2.4)J	2.6	2.7	2.8	3.0	(3.2)J	2.9	2.8	2.8	(2.7)P	(2.8)J	S	S	(2.9)J	(2.8)S	(2.9)	(2.7)	(2.7)J	(2.7)J	(2.8)JK
2	(2.4)K	2.1K	2.2K	(2.2)FK	2.1FK	2.5K	2.8K	2.9K	(2.5)JK	GK	GK	2.3K	2.3K	2.2K	(2.4)JK	(2.4)JK	2.6K	2.6K	2.7K	(2.4)JK	CK	FK	(2.3)FK	(2.6)FK
3	2.4FK	(2.3)FK	2.2FK	2.3FK	2.4FK	2.6FK	2.8F	(3.1)	3.1	2.9	3.0	2.7	(2.7)	(2.7)P	2.7	2.7	2.8	SC	NS	2.7	2.6	2.8	2.7	(2.7)J
4	2.6	2.4	2.6	2.6	(2.5)J	(2.6)J	(2.9)J	3.1	3.1	(2.9)P	(2.9)P	2.8	(2.8)P	(2.6)P	(2.7)P	(2.7)J	(2.6)J	SC	NS	(2.7)	(2.6)P	(2.7)	2.9	(2.7)JF
5	(2.8)JF	(2.9)JF	(2.6)JF	(2.9)JF	(2.7)F	(2.8)F	(2.8)JF	(3.1)P	3.0	2.8	2.9	(2.8)J	2.7	2.7	2.7	2.8	2.7	(2.8)P	C	(2.8)J	SC	(2.6)J	(2.6)J	(2.8)J
6	(2.9)J	(2.9)J	(2.9)J	(3.0)JF	(2.6)J	2.5	(2.6)J	3.0	2.9	3.0	2.8	2.8	2.7	2.7	2.7	2.8	(2.7)	(2.7)	C	2.8	2.7	(2.8)J	3.0	2.8
7	2.9	2.7	2.7	(2.7)J	(2.6)J	2.5	(2.8)J	2.8	3.0	3.0	3.0	2.8	2.8	2.7	2.6	2.8	(2.7)J	(2.8)P	2.6	(2.7)S	2.7	(2.7)J	2.7	2.8
8	2.5	2.8	2.8	(2.6)J	(2.6)JF	(2.8)J	(3.3)JF	3.2	3.1	3.0	3.0	(3.0)J	(2.9)J	2.8	(2.7)J	2.7	(2.8)P	NS	NS	(2.9)P	(2.7)P	2.7	2.5	2.6
9	2.7	2.6	(2.5)J	2.3	(2.3)J	(2.4)J	(2.5)J	(3.2)J	2.9	2.8	2.6	2.7	2.8	2.8	2.7	2.8	2.8	3.1	3.8	2.7	2.9K	(2.5)JK	2.4FK	2.7K
10	K(3.0)JF	2.2FK	(2.4)FK	2.2K	(2.4)FK	2.2FK	2.2FK	2.7K	3.1K	3.1K	2.9K	3.0K	(3.0)K	2.7K	2.8K	2.7K	2.8K	2.8K	(3.1)PK	2.8K	2.9K	(2.8)JK	K(2.7)J	(2.5)JK
11	(2.4)ZK	FK	FK	K(2.8)FJ	(2.5)FK	FK	K(2.9)JF	3.5	3.3	3.1	2.9	2.9	2.9	2.9	2.9	3.0	(3.3)P	(3.1)J	(3.2)P	(2.9)S	(3.0)J	(2.9)JF	(2.5)J	2.5
12	(2.6)J	(2.5)JF	(2.4)F	(2.5)F	F	(2.7)F	2.8	3.0	3.4	(3.1)J	(3.2)P	3.0	3.0	3.0	3.0	2.9	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	3.1	3.1	3.1	(3.0)J	2.9	(3.0)J	(2.9)J	2.9	2.9	C	(2.9)J	(2.9)J	2.8	2.9	3.1
14	(2.8)J	(2.8)JF	(2.4)FZ	C	C	C	C	C	C	3.1	2.9	3.1	3.1	C	(3.0)P	(3.1)J	S C	(3.0)	S C	(3.1)J	(2.9)J	2.8	(2.9)J	2.9
15	3.4	(3.0)JF	(2.7)	(3.0)	(3.0)J	(3.4)	(3.2)	(2.7)C	(3.7)C	(3.4)P	3.1	3.0	3.1	(3.0)J	(3.0)J	3.1	S C	(3.1)P	(3.5)P	3.2	3.2	3.1	(2.9)J	3.0
16	(3.1)J	2.9	3.1	2.5FZ	3.0F	2.7F	3.0F	3.6	(3.3)J	3.4	3.1	3.1	3.1	(3.2)	(3.2)	(3.6)	(3.1)	(3.4)	(3.2)	(3.3)	3.1	2.8	2.9	(3.1)J
17	(2.8)J	(2.7)J	(2.8)P	(2.6)J	(2.8)J	(2.9)J	(2.9)J	(3.2)	3.0	(3.2)J	3.3	3.6	(3.2)	(3.2)	(3.2)	(3.1)	3.0	(3.3)	(3.3)	(3.2)	3.2	3.0	2.8	2.9
18	(2.9)J	(2.8)J	(2.8)J	(2.9)J	(2.9)J	(2.7)J	(2.9)J	(3.2)J	(3.2)	(3.1)J	(3.3)J	3.2	(2.9)	(3.1)	(3.1)	(2.8)	(2.9)	C	(3.0)	(2.9)	(3.1)	(2.9)	2.8	(3.3)
19	(2.7)	(3.1)J	(2.8)J	(2.8)	2.7	(2.8)	2.9	3.1	3.4	S C	(3.2)	(3.1)	(3.1)	(3.0)	(2.9)	(2.9)	(3.1)	(3.3)	(3.6)	3.1	3.0	2.9	3.0	2.8
20	(2.7)J	(2.6)J	3.4	2.7	(2.7)J	2.7Z	2.9	(3.0)	3.0	(3.2)	2.9	3.0	2.9	(3.1)P	(3.1)P	(3.0)S	S C	C	C	S C	(3.0)	(3.0)J	(3.0)J	(2.9)J
21	(2.9)J	(2.7)J	(2.7)J	(2.6)J	(2.7)J	(2.7)J	C	3.1	(3.4)	3.2	3.3	(3.0)	(3.0)P	C	(3.0)P	2.9	3.0	C S	C	C	(3.0)J	2.9	2.9	2.7
22	2.8	2.6	2.7	2.6	2.5	(2.6)JF	2.6	3.2	(3.3)	(3.1)J	(3.0)J	(3.0)	3.1	2.9	2.8	(3.0)P	(2.9)	3.0	(3.0)	(3.0)J	2.8	3.0	2.8	2.8
23	2.8	2.7	2.5	(2.5)J	2.5	2.7F	2.9F	3.1	3.0	3.1	2.7	2.6	(2.8)	2.8	(2.6)	2.7	(2.9)	(2.9)J	(3.0)	3.0	2.8	2.7	2.6	(2.6)J
24	2.5	2.8	2.9	3.0	2.9F	2.4	C	C	C	(3.1)C	(3.0)P	2.9	2.8	(2.8)	2.8	2.9	2.8	3.2	NS	2.8	2.8	2.8	2.9	(3.0)J
25	(2.8)J	(2.8)J	(2.8)J	(2.7)J	2.7	2.7	(2.9)J	3.5	(3.1)P	3.1	(3.0)P	3.0	2.9	2.9	2.8	2.8	2.8	(2.9)J	NS	(3.0)	2.7	2.9	2.8	2.8
26	2.7	2.7	(2.8)J	(2.6)J	(2.7)J	2.8	(2.8)J	3.1	3.1	3.2	3.0	(3.0)P	(2.9)P	(2.8)P	2.8	(2.8)B	(2.8)S	(2.8)S	SC	(3.0)P	3.0	2.8	2.8	2.9
27	2.9	2.9	2.8	(2.9)J	2.9	2.7	2.6	3.0	3.3	3.1	3.1	3.0	(3.0)P	(2.9)P	NS	(2.9)S	(2.9)P	NS	NS	(3.0)	(2.8)S	2.8	2.8	2.8
28	2.9	2.9	2.5	2.5	(2.9)J	2.9	2.8	3.1	3.1	3.2	(3.2)P	3.0	(2.8)P	2.7	(2.8)F	(2.8)	(2.9)	(2.9)	SC	3.1	2.8	(3.2)J	2.9	2.9
29	2.8	2.9	(3.0)	(3.2)JF	2.9	(3.0)JF	(2.9)F	(3.2)J	3.1	(3.2)P	3.5	3.1	3.1	2.8	2.8	3.4	(2.8)P	(2.9)P	N	(2.9)P	2.7	2.8	2.9	2.4
30	2.8	2.9	2.9	2.9	2.8	2.7	2.6V	3.1	3.3	3.2	(3.1)	(2.9)P	(2.9)P	2.7	(2.7)	(2.8)	(2.8)	(3.1)	(3.0)	3.0	(2.9)	2.9	2.9	2.9
31	2.7	2.8	2.6	2.6	2.9	2.4	(2.7)J	(2.6)	(3.2)J	3.0	(3.0)	(2.9)	2.8	2.9	2.9	(2.9)S	3.1	3.0	NS	(3.1)S	(2.9)P	(2.9)S	2.8	3.1
Median	2.8	2.8	2.7	(2.6)	(2.7)	2.7	(2.8)	3.1	3.1	3.1	3.0	3.0	2.9	2.8	(2.8)	2.8	(2.8)	(2.9)	(3.0)	(2.9)	2.9	2.8	2.8	2.8
Count	30	29	29	29	28	28	27	28	28	30	31	31	31	29	30	30	26	23	14	28	28	29	30	30

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 703919

Form adopted June 1946

TABLE 66

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

IONOSPHERIC DATA

F1-M3000 (Characteristic), _____ (Unit), October (Month), 19 47

Observed at Washington, D.C.

Lat. 39.0°N, Long. 77.5°W

75° W Mean Time

National Bureau of Standards (Institution)

Scaled by: E J.W., J.M.C.

Calculated by: M.C.E.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1							Q	L	L	L	L	L	L	L	L	L	L	L	Q					
2								L^K	L^K	$(3.4)^{\frac{F}{K}}$	3.4^K	3.4^K	$(3.2)^K$	3.5^K	3.3^K	3.4^K	L^K	L^K	Q^K					
3								Q	A	Q	L	L	L	L	L	L	L	L	Q					
4							Q	L	L	L	L	L	L	L	L	L	L	L	L	Q					
5							Q	L	L	L	L	L	L	L	L	L	L	L	Q					
6							Q	L	L	L	L	L	L	L	L	L	L	L	Q					
7							Q	L	L	L	L	L	L	L	L	L	L	L	Q					
8							L	L	L	L	L	L	L	L	L	L	L	L	Q					
9								Q	Q	Q	L	L	L	L	L	Q								
10								Q^K	Q^K	Q^K	Q^K	Q^K	Q^K	L^K	L^K	L^K	L^K	Q^K	Q^K					
11								Q	L	L	L	L	Q	Q	Q	Q	Q	Q						
12								Q	Q	Q	Q	L	Q	L	L	L	Q	C	C					
13								C	C	Q	L	L	L	L	L	L	Q	Q						
14								C	C	Q	L	L	L	Q	L	L	L	Q	Q					
15									L	Q	L	Q	L	Q	Q	Q	Q	Q	Q					
16								Q	Q	L	L	L	Q	L	L	L	Q	Q						
17								Q	Q	Q	Q	L	L	Q	L	Q	Q	Q						
18								Q	Q	L	L	Q	B	L	L	Q	Q	Q						
19								Q	Q	L	L	Q	L	L	Q	L	Q							
20								Q	Q	Q	L	L	L	L	Q	Q	Q	Q	Q					
21								Q	Q	Q	Q	L	L	C	Q	Q	Q	Q						
22								Q	Q	L	L	Q	Q	L	L	Q	Q	Q						
23									Q	L	L	L	L	L	L	L	Q							
24							C	C	C	Q	Q	L	Q	Q	Q	Q	Q	Q						
25								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q					
26								Q	Q	L	Q	Q	Q	Q	Q	Q	Q	Q						
27								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q						
28								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q						
29								Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q					
30								Q	Q	L	L	L	L	L	Q	Q	Q	Q						
31								Q	Q	Q	Q	Q	Q	L	Q	Q	Q	Q						
Median																								
Count																								

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

Manual ☐ Automatic ☒

U. S. GOVERNMENT PRINTING OFFICE: 1948 O - 708819

TABLE 67

Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D.C.

Form adopted June 1946

IONOSPHERIC DATA

E-MI500 (Characteristic) ____ (Unit) October (Month), 1947

Observed at Washington, D.C.

Lat. 39.0°N, Long. 77.5°W

75° W Mean Time

Notional Bureau of Standards (Institution)

Scaled by: E.J.W., J.M.C.

Calculated by: B.C.V., N.M.

Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								(4.4)	4.4	4.6	4.4	4.4	(4.2)	(4.1)	4.3 H	4.2	4.4	4.2						
2								(3.9) K	(4.7) H K	(4.6) K	4.5 K	4.5 K	4.3 K	(4.2) K	4.9 K	4.2 K	4.4 K	4.2 K						
3								4.3	A	(4.3)	(4.6)	(4.4)	4.4	4.4	4.4	4.2	4.4	(4.4) J						
4							S	(4.2) S	4.7	A	A	(4.5)	(4.1)	(4.2)	4.2	A	(4.5)	(4.4)	S					
5								(4.2)	(4.5) F	A	(4.1)	(4.6) H	(4.0)	(4.3)	(4.3) H	4.2	4.4	(4.2) F						
6								4.0	4.7	(4.2)	4.4	4.4	4.4	4.4	(4.6)	(4.2)	(4.5) F	A						
7								A	4.5	(4.6)	4.4	4.4	(4.5)	4.5	4.3	(4.2) S	(4.3) A	A						
8							S	(4.3)	4.3	(4.2)	(4.1) F	4.3	(4.4)	(4.4)	3.9	4.3	4.4	(4.4) H						
9								4.3 H	(4.5)	4.9	A	4.7	(4.5)	4.9	4.9	4.4	4.7	4.8						
10								3.9 K	4.1 K	(4.5) K	(4.3) K	4.3 K	A K	(4.5) K	4.3 K	4.4 K	4.4 K	(3.6) K						
11								4.3	(4.3)	4.4	4.2	4.3	(4.2)	4.3	4.3	(4.6)	4.3	(4.3) H						
12								4.4 H	4.1	4.6	4.5	4.2	(4.2) B	4.2	4.3	4.2	C	C						
13								C	C	(4.4) C	(4.5) A	A	B	(4.0)	4.0	4.3	(4.1)	B						
14								C	C	(4.0)	B	(4.1)	(3.9)	C	(4.8)	4.3	5.4							
15								C	(4.6)	(4.5)	(4.5)	B	(4.1) B	(4.1) B	(4.1)	4.2 H	4.5	(4.2) H						
16								A	4.8	B	(4.5)	B	B	B	4.3	4.7	B	B						
17									(4.3)	A	B	(4.5)	B	B	(4.6)	4.1	4.2	B	B					
18								4.1	4.1	(4.1)	B	B	B	B	4.0	B	(4.1)	B						
19							4.6	A	A	(4.2)	B	B	B	B	(3.1)	B								
20								(4.6) H	4.3	B	(4.5)	(4.3)	(4.0)	4.1	(4.2)	(4.4)	B	B						
21								A	A	B	(4.7)	A	B	C	(4.3)	4.2	A							
22								A	(4.5)	A	A	B	B	3.7	4.2	4.2	4.4	(4.0)						
23								4.1	(4.1)	4.4	4.3	4.2	B	B	4.0	4.2	A	B						
24							C	C	C	B	(4.4)	(4.1) B	(4.4)	(4.3)	4.2	4.2	B	B						
25								(4.6)	A	A	B	B	B	B	4.2	4.2	4.1	B						
26								(4.8)	(4.3) H	(4.4) H	A	(4.3)	B	B	B	3.8	4.1	(4.7) S						
27								(4.2) H	3.4	B	(3.8) B	(3.9) B	(4.1) B	(4.2) H	(4.3) B	(4.3)	4.4	A						
28								(4.0) H	(4.1)	4.1	4.1	4.2	4.2	4.1	(4.2)	4.4	4.4	(4.1) H						
29								(4.4) H	4.3	(4.4) H	B	(4.1) B	4.2	4.2	4.2	4.5 H	4.5 H	B	A					
30								4.2 H	A	3.9	4.1	4.4	(4.2) A	4.2	4.4	(4.5)	B	B	B					
31								4.4	(3.9)	4.1	B	B	B	3.9	4.1	4.2	4.4	B						
Median								(4.3)	4.3	(4.4)	(4.4)	4.3	(4.2)	4.2	4.3	4.2	4.4	(4.2)						
Count								21	23	21	20	22	19	22	30	28	23	13						

Sweep 1.0 Mc to 25.0 Mc in 0.25 min

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Table 68

Ionospheric Storminess at Washington, D.C.

October 1947

Day	Ionospheric Character* 00-12 GCT	12-24 GCT	Principal storms Beginning GCT	End GCT	Geomagnetic character** 00-12-GCT	12-24 GCT
1	2	3			4	3
2	4	6	0400	---/	5	4
3	6	0	----	1100	5	3
4	1	1			2	2
5	1	2			1	2
6	0	2			1	2
7	0	2			2	3
8	1	1			3	3
9	1	2			4	4
10	5	4	0100	----	5	4
11	4	2	----	1200	5	4
12	3	2			5	4
13	***	1			3	3
14	1	2			4	3
15	3	2			4	4
16	1	1			4	2
17	1	1			3	3
18	0	2			3	3
19	1	1			3	3
20	1	1			3	3
21	1	1			2	2
22	1	1			3	2
23	2	3			3	2
24	1	1			3	2
25	0	2			1	1
26	1	2			1	1
27	1	2			0	0
28	1	2			0	1
29	1	2			0	1
30	2	2			1	2
31	1	0			2	2

*Ionospheric character figure (I-figure) for ionospheric storminess at Washington, D.C., during 12-hour period, on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

**Average for 12 hours of Cheltenham, Maryland, geomagnetic K-figures on an arbitrary scale of 0 to 9, 9 representing the greatest disturbance.

***No readable record. Refer to table 57 for detailed explanation.

/Dashes indicate continuing storm.

Table 69

Sudden Ionosphere Disturbances Observed at Washington, D.C., October 1947

No sudden ionosphere disturbances were observed from October 1 to 16, although data were insufficient to assure that none occurred. With the regular data available, no SID was observed during the remainder of the month.

Table 70

Sudden Ionosphere Disturbances Reported by Engineer-in-Chief, Cable and Wireless, Ltd., as Observed in England

1947 Day	GCT Beginning	GCT End	Receiving station	Location of transmitters
September 22	1318	1340	Somerton	Australia, Canada, Ceylon, India, New York
25	1405	1430	Brentwood	Belgian Congo, Bulgaria, Canary Is., Chile, Colombia, Greece, Madagascar, Malta, Southern Rhodesia, Spain, Switzerland, Venezuela, Yugoslavia, Zanzibar
25	1405	1430	Somerton	Barbados, Egypt, Gold Coast, New York, Union of S. Africa
27	0945	1030	Brentwood	Canary Is., Kenya, Southern Rhodesia, Spain, Switzerland, Yugoslavia, Zanzibar
October 3	0930	1015	Brentwood	Belgian Congo, Greece, India, Iran, Kenya, Madagascar, Palestine, Southern Rhodesia, Spain, Switzerland, Syria, Turkey, U.S.S.R., Zanzibar
3	0935	1015	Somerton	Argentina, Ascension I., Brazil, Ceylon, China, Egypt, Gold Coast, India, Nigeria, Union of S. Africa

Note: Observers are invited to send to the CRPL information on times of beginning and end of sudden ionosphere disturbances for publication as above. Address letters to the Central Radio Propagation Laboratory, National Bureau of Standards, Washington 25, D. C.

Table 71

Provisional Radio Propagation Quality Figures
(Including Comparisons with CRPL Warnings and CRPL Probable Disturbed Period Forecasts)
September 1947

Day	North Atlantic						North Pacific					
	Quality figure		CRPL* Warning		CRPL** Forecast of probable disturbed periods	Geomagnetic K_{Ch}	Quality figure		CRPL* Warning		CRPL** Forecast of probable disturbed periods	Geomagnetic K_{Ch}
	01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT		01-12 GCT / 13-24 GCT	01-12 GCT	13-24 GCT	01-12 GCT	13-24 GCT		01-12 GCT / 13-24 GCT
1	6	6	X			2 2	7	7	X			2 2
2	6	6			X	2 3	7	5			X	2 3
3	5	5		X	X	5 5	6	(4)		X	X	5 5
4	5	6	X	X		5 3	6	5	X	X		5 3
5	5	5	X	X		3 3	6	5	X	X		3 3
6	5	5	X	X		3 3	6	6	X	X		3 3
7	5	5	X	X		4 4	5	5	X	X		4 4
8	5	6	X	X		3 2	8	6	X	X		3 2
9	7	6				1 1	7	5				1 1
10	6	6				1 1	7	5				1 1
11	6	5				1 3	8	5				1 3
12	6	6			X	3 2	7	7			X	3 2
13	(3)	(4)		X	X	5 4	7	6		X	X	5 4
14	(3)	(4)	X	X	X	5 4	5	7	X	X	X	5 4
15	(4)	(4)	X	X	X	5 4	5	(3)	X	X	X	5 4
16	(4)	5	X		X	3 3	5	6	X		X	3 3
17	(4)	(4)		X	X	5 4	5	7		X	X	5 4
18	(4)	(4)	X	X	X	4 4	(4)	6	X	X	X	4 4
19	(4)	(3)	X	X	X	4 3	5	6	X	X	X	4 3
20	(4)	(4)			X	3 2	5	6			X	3 2
21	5	5				4 2	6	7				4 2
22	5	5				4 4	6	7				4 4
23	(4)	5		X		5 3	7	7		X		5 3
24	(4)	(3)	X	X		4 6	5	(2)	X	X		4 6
25	(2)	(3)	X	X		7 4	5	5	X	X		7 4
26	5	6	X			3 3	6	5	X			3 3
27	5	6				2 3	7	7				2 3
28	6	6				2 2	7	6				2 2
29	5	5				2 2	5	5				2 2
30	5	6			X	1 2	6	6			X	1 2
Score:												
H			9		8				4		3	
M			1		3				0		1	
G			11		15				12		17	
(S)			8		2				7		6	
S			1		2				7		3	

Quality Figure Scale:
1 - Useless
2 - Very poor
3 - Poor
4 - Poor to fair
5 - Fair
6 - Fair to good
7 - Good
8 - Very good
9 - Excellent

Symbols:
X Warning given or probable disturbed date

H Quality 4 or worse on day or half day of warning

M Quality 4 or worse on day or half day of no warning

G Quality 5 or better on day of no warning

(S) Quality 5 on day of warning

S Quality 6 or better on day of warning

( ) Quality 4 or worse (disturbed)

Geomagnetic K_{Ch} on the standard scale of 0 to 9, 9 representing the greatest disturbance.

*Broadcast on WWV, Washington, D.C. Times of warnings recorded to nearest half day as broadcast.

**In addition to dates marked X, the following was designated as a probable disturbed day on forecasts more than 8 days in advance of said date: September 11.

Table 72

CORONAL OBSERVATIONS AT CLIMAX, COLORADO

September* 1947

First row - green line 5303A
Second row - red line 6374A
Third row - red line 6704A

Day	Time of observation GCT	Degrees from astronomical north																																				
		0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175
20		-	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	18	24	22	15	14	11	10	12	15	27	20	12	10	12	8	8	8	--	--
																1	2	3	10	15	19	10	10	7	2	2	1	12	12	1	1						
																				1	2	1	1														
21		-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	12	18	25	31	20	15	12	14	14	20	--	--	20	13	10	15	8	8	8
																2	2	5	11	8	18	27	15	4	2	3	6	8	10	8	2	1	1				
																		1	2	3	4	4	3	3	3	2	1	8	9	8	6	2	2	1			
22	1556-1624	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	12	18	19	16	15	12	13	14	15	16	17	--	--	--	--	--	--	--
																2	3	8	12	11	5	1	1	2	2	6	8	5									
23	1634-1708	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8	9	19	19	19	20	14	13	17	25	28	20	13	12	10	9	8	--	--	--
																1	1	2	5	10	13	10	9	6	6	9	10	11	18	2	1						
																			2	4	4	4	3	2	2	2	2	2	2	2	2	2	2	1	1		
25	1616-1647	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	10	13	14	13	30	30	18	15	15	14	17	16	13	13	14	15	12	10	8	--	--
																			1	4	5	10	12	10	2	2	2	1	1	1							
																1	1	1	3	3	4	6	6	5	3	2	2	2	1	1	1	1	1	2	2	1	1
26	1703-1735	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9	9	11	18	22	20	19	11	12	13	13	10	8	--	--	--	--	--	--	--
																	1	2	3	8	8	10	10	2	1	9	5	1									
																1	1	2	2	4	5	5	4	3	2	2	2	1	1	1							

Table 72 (continued)

Day	Time of observation GCT	Degrees from astronomical north																																				
		180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355
20		--	--	--	--	--	--	--	--	--	--	--	--	--	--	13	13	14	14	13	13	13	12	11	8	10	12	18	20	25	18	13	13	14	11	8	--
																				3	9	9	5	1	1	1	2	4	3	2	1						
21		7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
22	No observation																																				
23	1634-1708	--	--	--	--	--	--	--	--	--	--	--	--	5	8	9	6	5	8	11	11	9	11	9	10	10	13	14	19	15	13	11	8	--	--	--	--
																	1	4	4	2	3	3	1	1		1	5	10	10	4	4	1					
25	1616-1647	--	--	--	7	9	9	8	7	--	--	--	--	--	--	--	6	6	--	6	14	13	11	10	13	12	17	17	14	15	15	12	9	7	--	--	--
																									1	3	10	18	8	1	1						
26	1703-1735	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	7	7	7	8	14	13	20	30	38	13	13	13	11	10	9	8	--
																										1	5	17	15	1							

*These measurements are in addition to those for September 1947 published in Table 99, F38.

Table 73

CORONAL OBSERVATIONS AT CLIMAX, COLORADO

October 1947

First row - green line 5303A
Second row - red line 6374A
Third row - red line 6704A

Day	Time of observation GCT	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175
8	2111-2219	3	-	--	3	3	3	--	8	8	9	8	5	5	6	8	4	8	11	15	20	22	25	25	14	12	8	10	10	8	--	--	--	5	8	8	5
																1	2	1		1	11	11	8	12	1			1	3	5	4	1	1				
														1	1	1	2	3	4	4	5	5	4	2	1	2	1	1									
16	1710-1745	4	2	3	4	4	3	4	4	5	8	8	9	9	8	8	10	12	14	16	22	25	30	28	15	18	27	30	30	28	27	20	15	14	13	8	7
		1	1	1	1	1	1	1									1	5	7	10	14	12	11	11	3	5	10	9	12	1	1	3	2	1			
																			1	2	3	3	2	2	2	2	2	3	4	4	4	3	2	1	1		
21	1758-2113	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	16	18	22	21	18	18	19	25	21	17	16	17	18	11	12	12	--	--	--
										1	1	1	1	1	2	2	2	2	3	14	3	3	2	1	14	5	3	2	3	10	8						
																		1	3	5	5	4	4	4	5	5	5	4	4	4	3	2	2	2	1	1	1
27	1829-1904	7	5	5	5	5	4	--	--	--	--	--	--	--	--	--	9	18	19	19	19	20	20	16	18	19	20	19	11	9	8	7	--	--	--	--	--
						1	1	1	1	1	1	1	1	1	3	2	4	9	3	11	11	10	2	1	3	11	12	9	5	1							
																		1	2	4	5	5	5	4	4	4	4	4	2	1	1	1	1	1	1	1	1
31	1949-2035	5	5	5	4	--	--	--	--	--	--	--	--	--	--	--	4	6	9	14	14	13	12	9	9	8	9	11	15	12	8	7	9	10	7	8	9
					1	1			1	1	1	1	1	1	1	1	1	1	4	4			1	1	2	2	5	8	12	10	8	6	3				

Table 73 (continued)

Day	Time of observation GCT	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	295	300	305	310	315	320	325	330	335	340	345	350	355
8	2111-2219	--	--	--	9	8	8	9	8	8	--	--	8	8	7	8	8	10	11	13	16	28	24	20	18	25	22	31	28	25	21	26	13	11	--	--	--
																						2	4	9	9	9		9	10	5	10	3	5	5	2	1	1
																1	1	2	2	3	3	2	4	4	4	3	2	3	3	2	2	1	1				
16	1710-1745	6	9	11	13	13	13	12	13	12	9	8	13	13	14	11	12	14	13	11	34	33	40	15	13	11	15	28	26	27	30	25	18	14	12	8	5
																		1	2	1	2	10	20	18	13	11	12	5	2	1	5	12	10	10	8	3	2
														1	2	2	1	1	2	4	4	4	3	1			2	3	3	3	1	1					
21	No observation																																				
27	1829-1904	5	4	4	6	8	8	7	4	--	--	--	--	--	--	--	--	10	10	18	20	15	11	13	11	12	12	16	19	16	12	11	12	9	9	8	8
																			2	9	11	4	4	5	10	6	7	13	16	12	1						
																		2	2	8	8	6	2	2	1	1	1	1	1	1	1	1	1				
31	1949-2035	8	8	10	10	9	9	9	11	10	12	8	6	6	10	12	13	18	22	22	24	27	24	21	15	17	17	19	21	20	10	8	--	--	--	--	--
																			3				1	15	2	2	3	12	19	19	17	2	1				
																1	2	5	5	4	4	4	3	3	3	2	2	2	2								

Table 74

American and Zürich Provisional Relative Sunspot Numbers

October 1947

Day	American* number	Zürich** number	Day	American* number	Zürich** number
1	207	235	16	152	112
2	272	242	17	156	121
3	322	273	18	171	136
4	288	304	19	163	147
5	249	262	20	166	129
6	217	275	21	158	149
7	171	227	22	167	170
8	172	235	23	221	191
9	158	222	24	248	228
10	142	160	25	250	237
11	124	132	26	240	239
12	106	125	27	215	204
13	90	93	28	186	182
14	97	111	29	160	129
15	122	129	30	143	120
			31	128	111
No. of Days: 31			Monthly means:	182.6	181.6

*Median of data from 18 observers.

**Dependent on observations at Zürich Observatory and its stations at Locarno and Arosa.

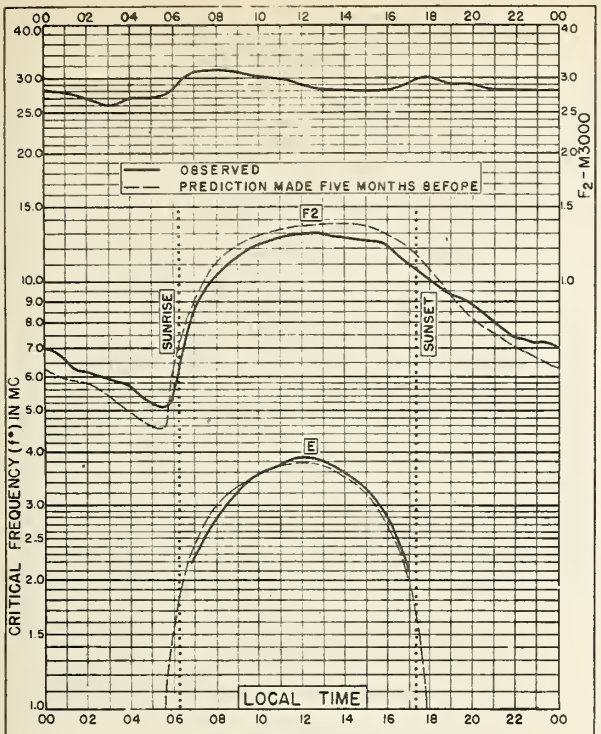

Fig. 1. WASHINGTON, D.C.
39.0°N, 77.5°W
OCTOBER 1947

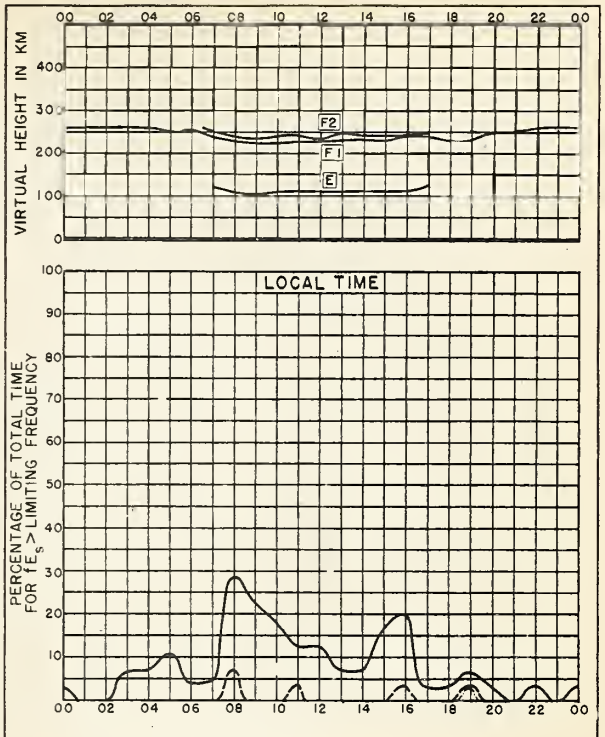

Fig. 2. WASHINGTON, D.C.
OCTOBER 1947

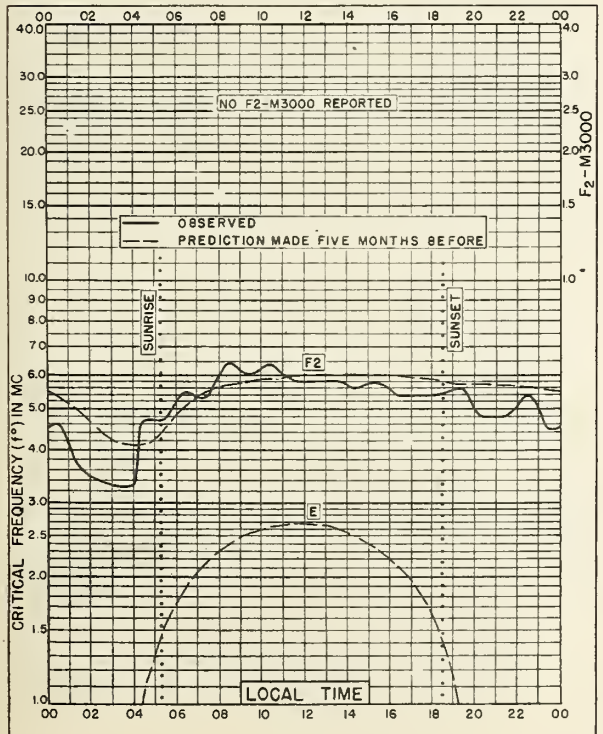

Fig. 3. CLYDE, BAFFIN I.
70.5°N, 68.6°W
SEPTEMBER 1947

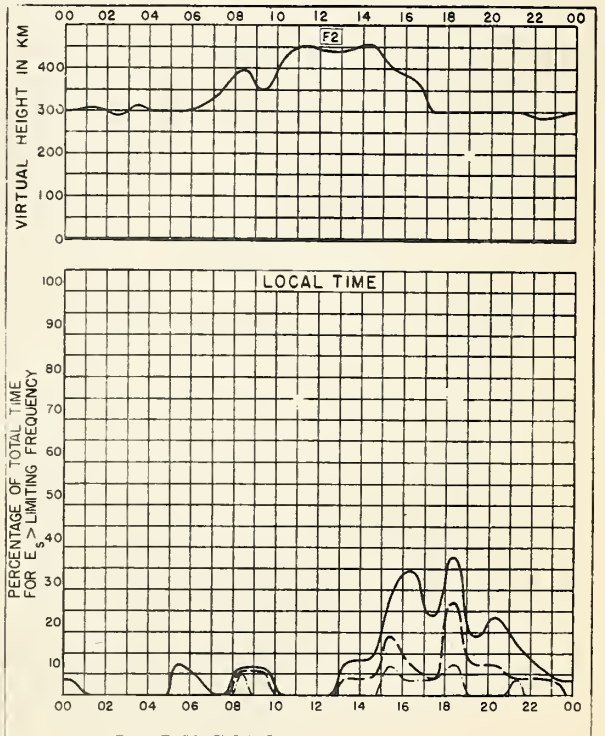

Fig. 4. CLYDE, BAFFIN I.
SEPTEMBER 1947

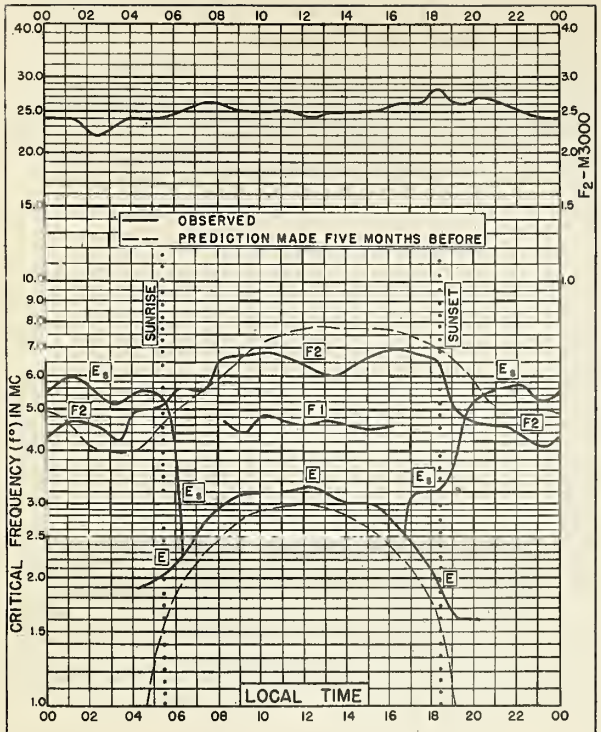

Fig. 5. FAIRBANKS, ALASKA
64.9°N, 147.8°W SEPTEMBER 1947

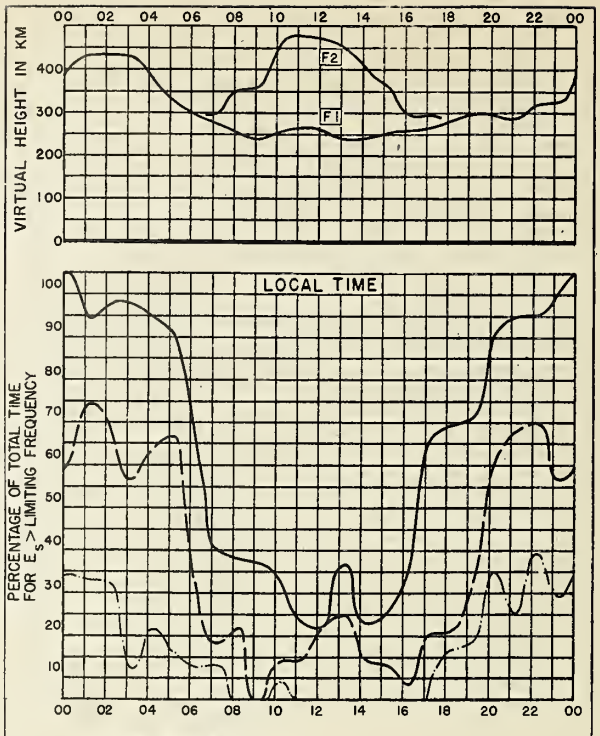

Fig. 6. FAIRBANKS, ALASKA SEPTEMBER 1947

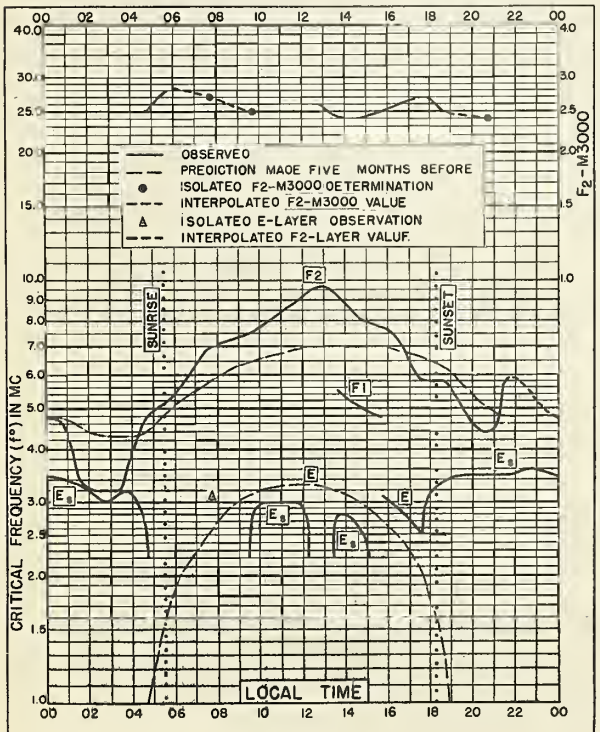

Fig. 7. CHURCHILL, CANADA
58.8°N, 94.2°W SEPTEMBER 1947

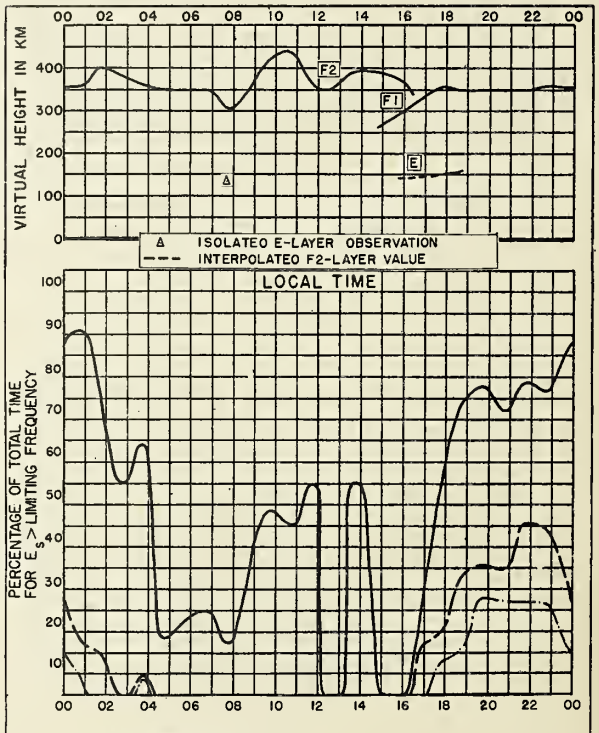

Fig. 8. CHURCHILL, CANADA SEPTEMBER 1947

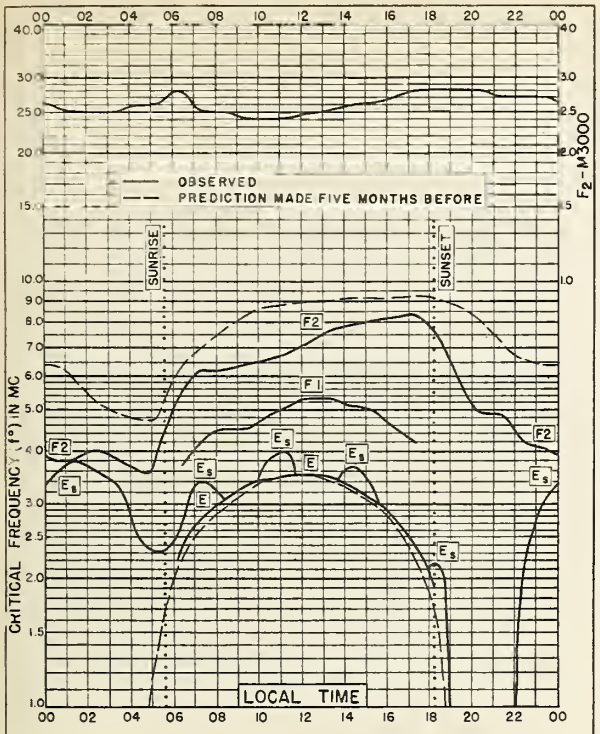

Fig. 9. PRINCE RUPERT, CANADA
54.3°N, 130.3°W SEPTEMBER 1947

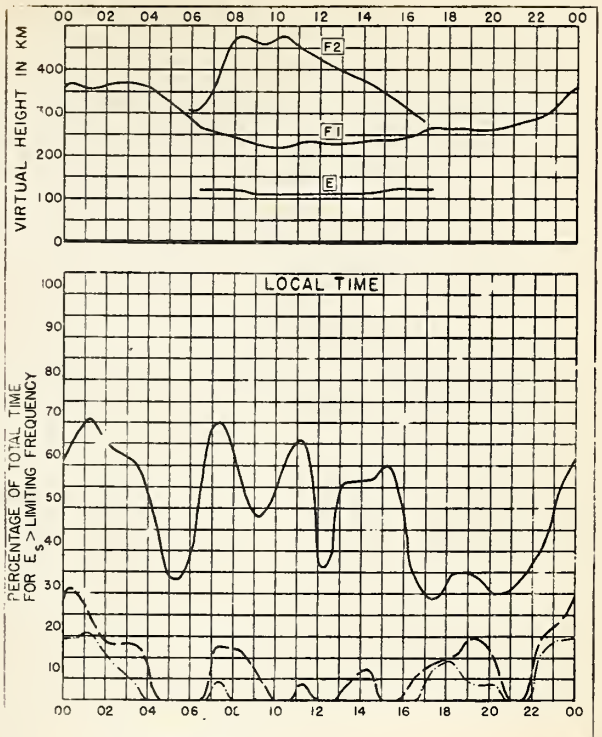

Fig. 10. PRINCE RUPERT, CANADA SEPTEMBER 1947

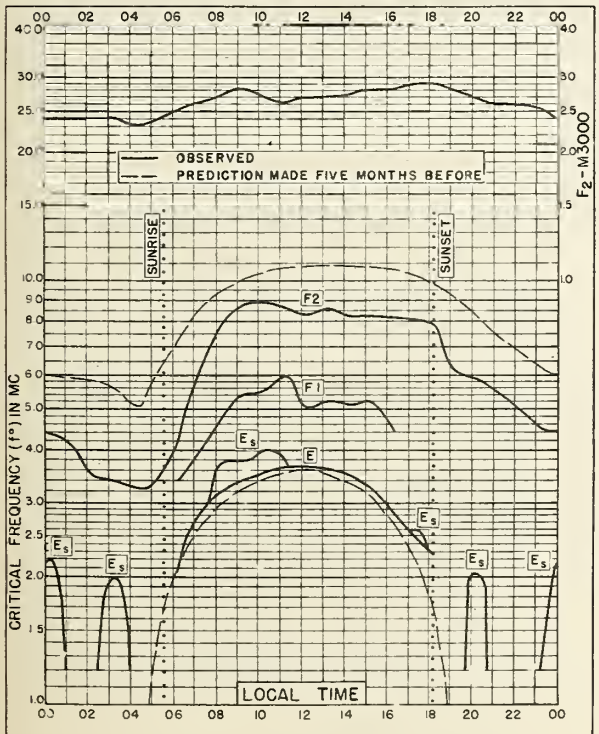

Fig. 11. ADAK, ALASKA
51.9°N, 176.6W SEPTEMBER 1947

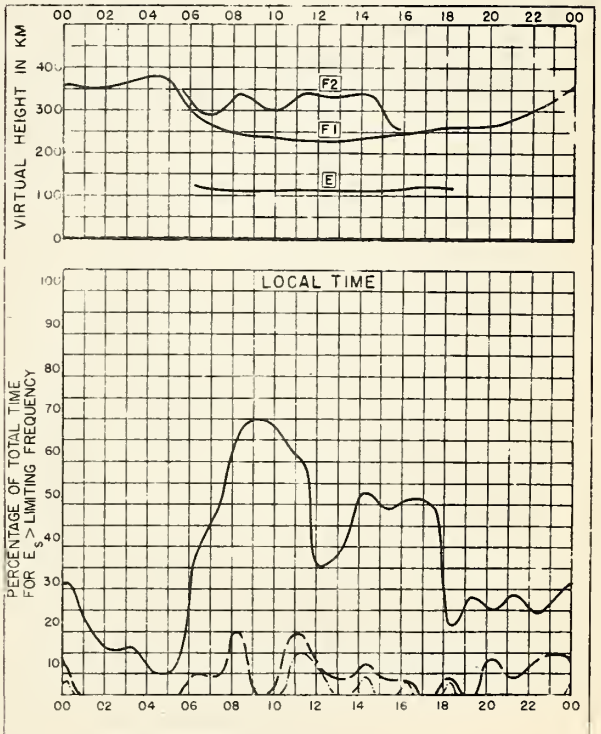

Fig 12. ADAK, ALASKA SEPTEMBER 1947

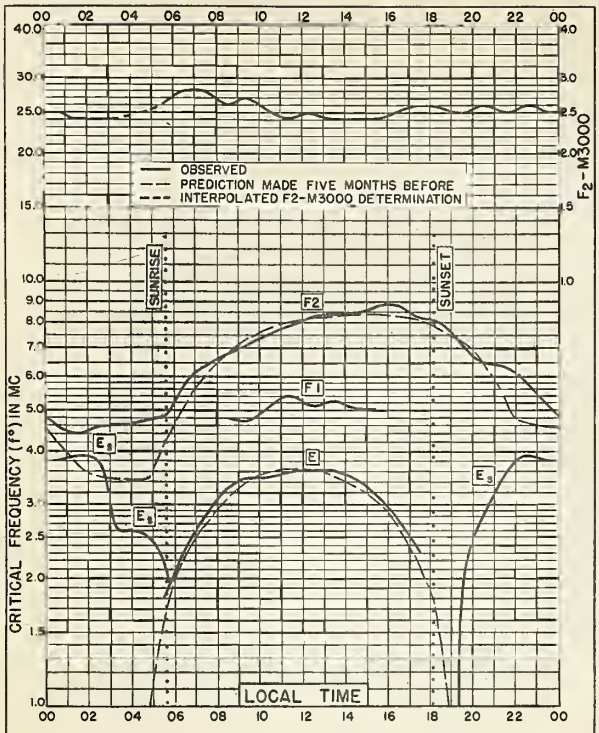

Fig. 13. PORTAGE la PRAIRIE, CANADA
49.9°N, 98.3°W SEPTEMBER 1947

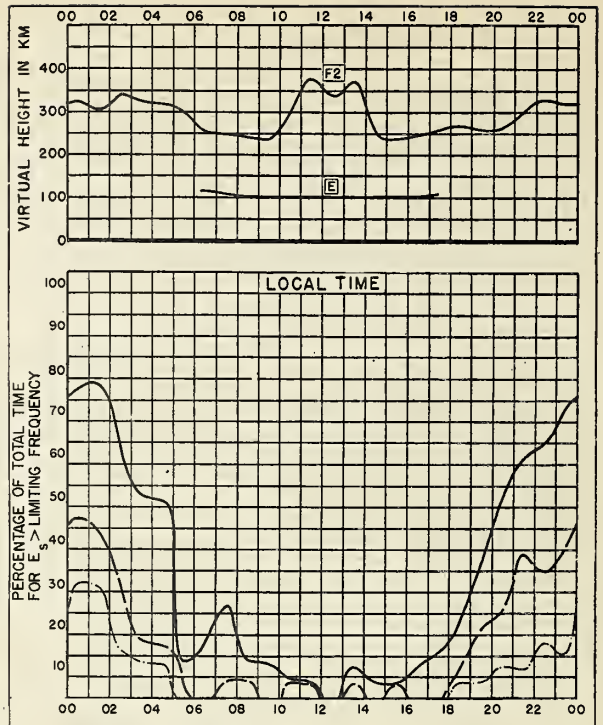

Fig. 14. PORTAGE la PRAIRIE, CANADA SEPTEMBER 1947

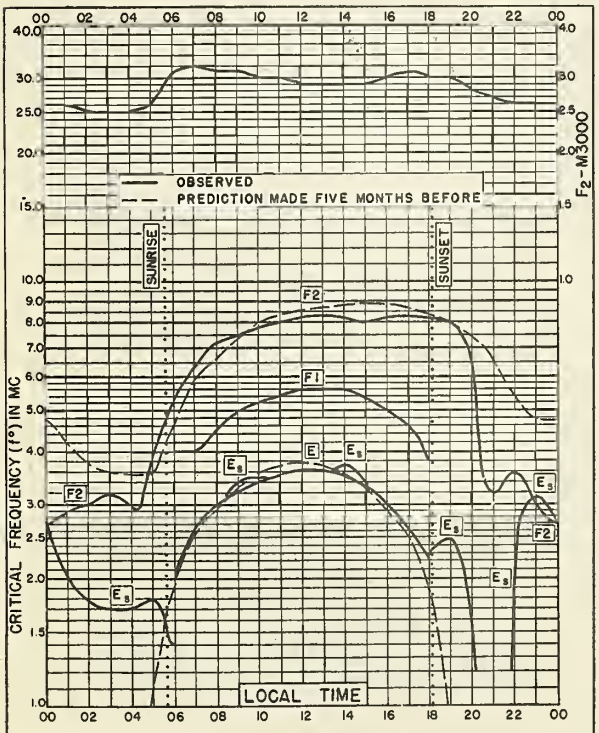

Fig. 15. ST. JOHN'S, NEWFOUNDLAND
47.6°N, 52.7°W SEPTEMBER 1947

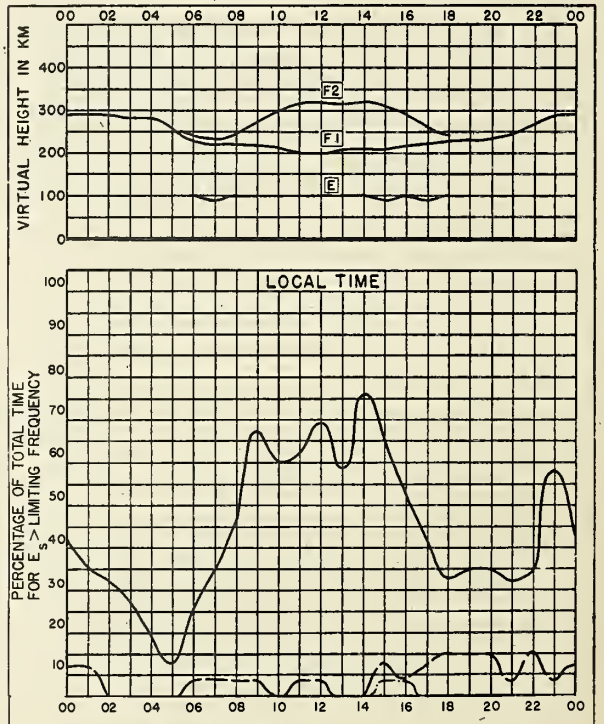

Fig. 16. ST. JOHN'S, NEWFOUNDLAND SEPTEMBER 1947

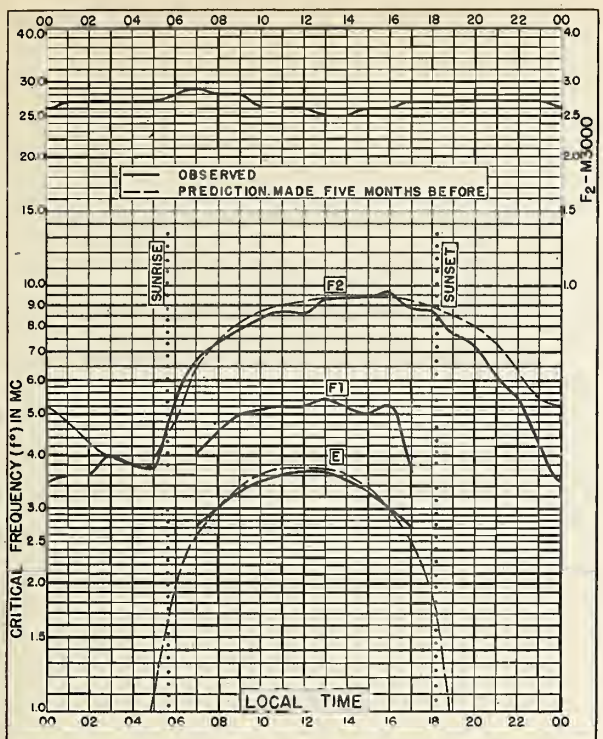

Fig. 17. OTTAWA, CANADA
45.5°N, 75.8°W SEPTEMBER 1947

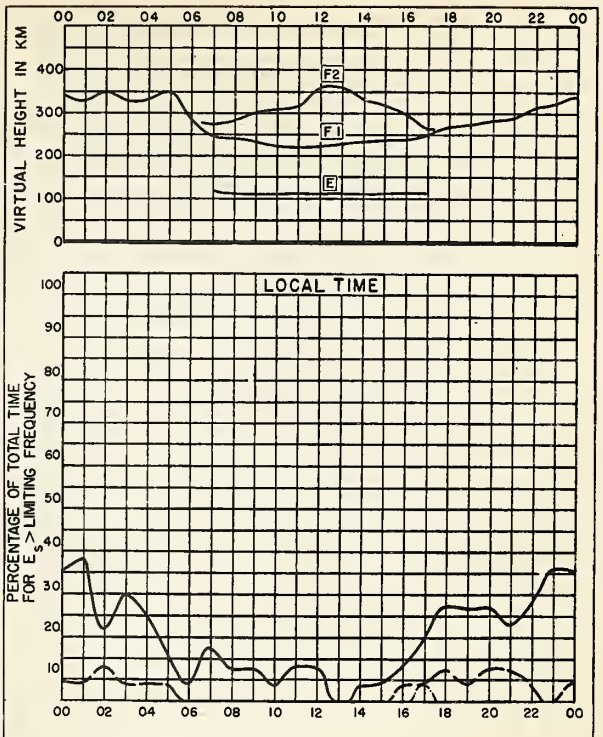

Fig. 18. OTTAWA, CANADA SEPTEMBER 1947

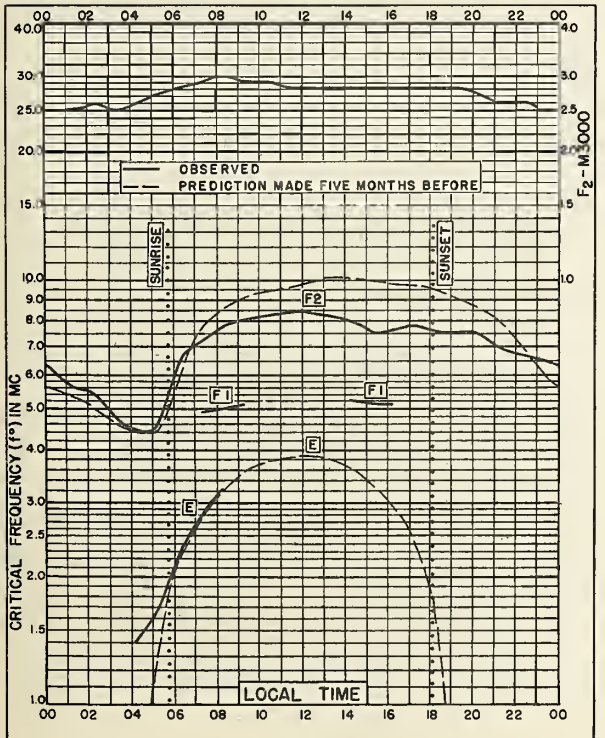

Fig. 19. BOSTON, MASSACHUSETTS
42.4°N, 71.2°W SEPTEMBER 1947

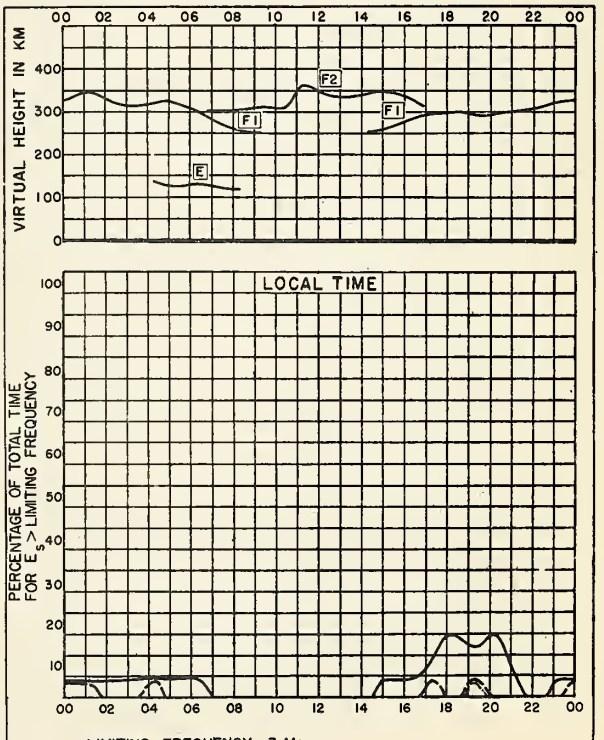

Fig. 20. BOSTON, MASSACHUSETTS SEPTEMBER 1947

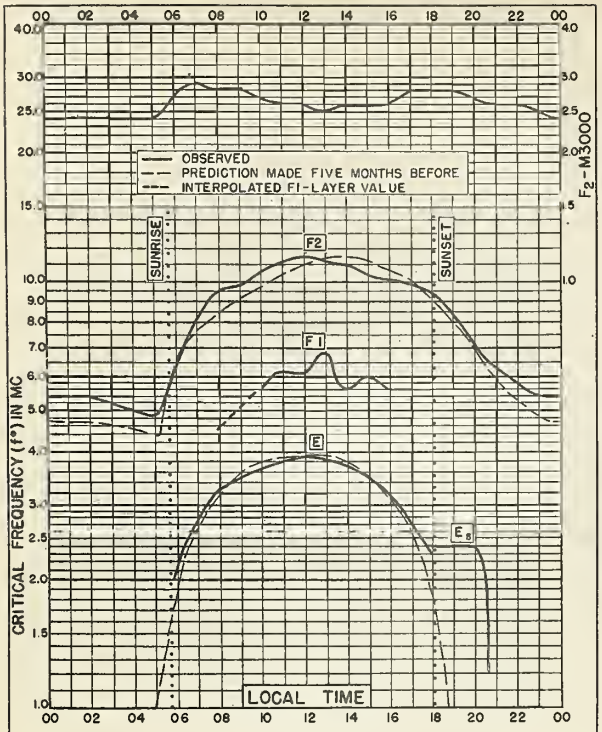

Fig. 21. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W SEPTEMBER 1947

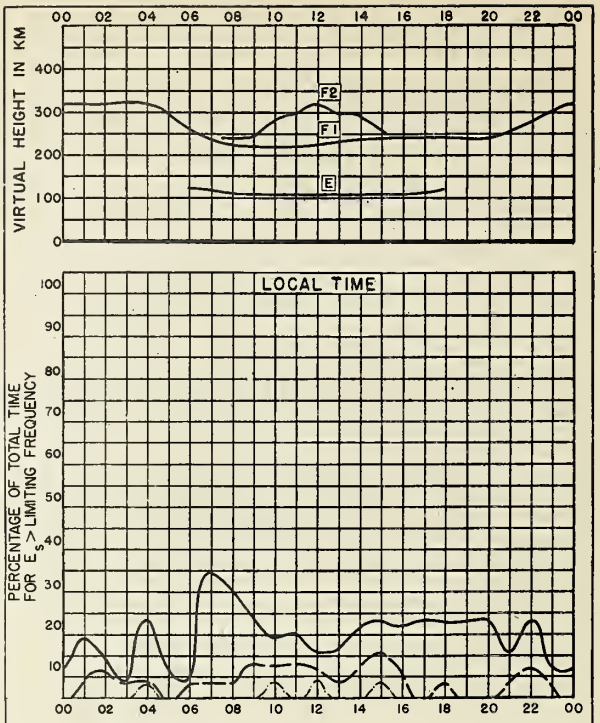

Fig. 22. SAN FRANCISCO, CALIFORNIA SEPTEMBER 1947

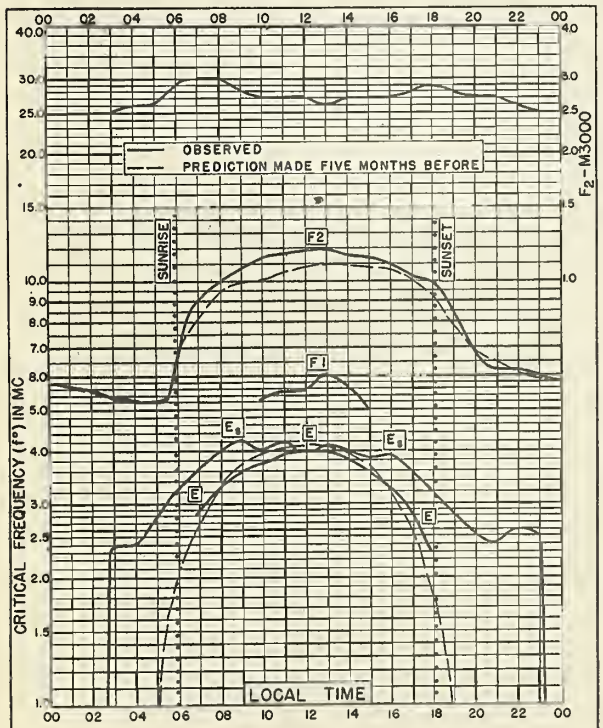

Fig. 23. WHITE SANDS, NEW MEXICO
32.6°N, 106.5°W SEPTEMBER 1947

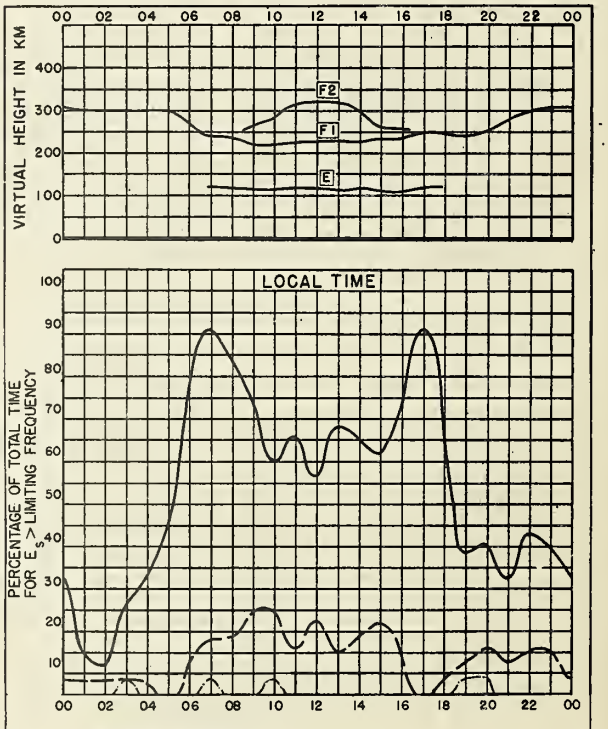

Fig. 24. WHITE SANDS, NEW MEXICO SEPTEMBER 1947

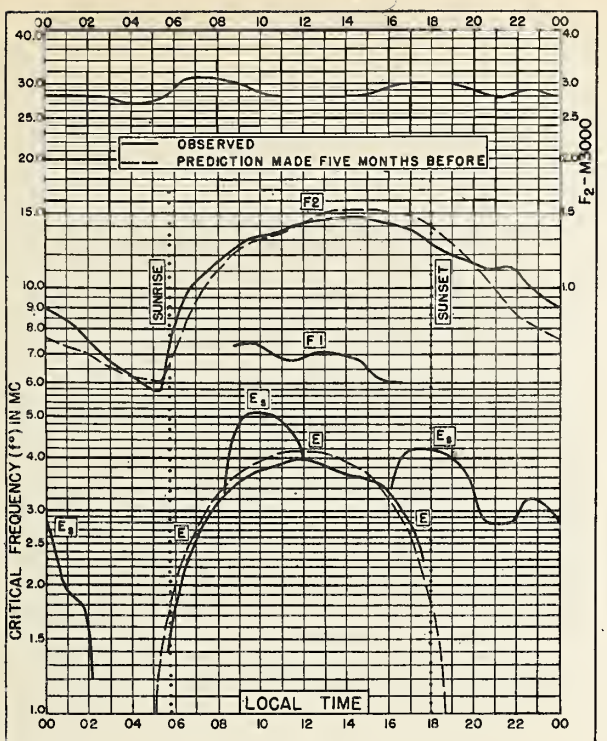

Fig. 25. WUCHANG, CHINA
30.6°N, 114.4°E SEPTEMBER 1947

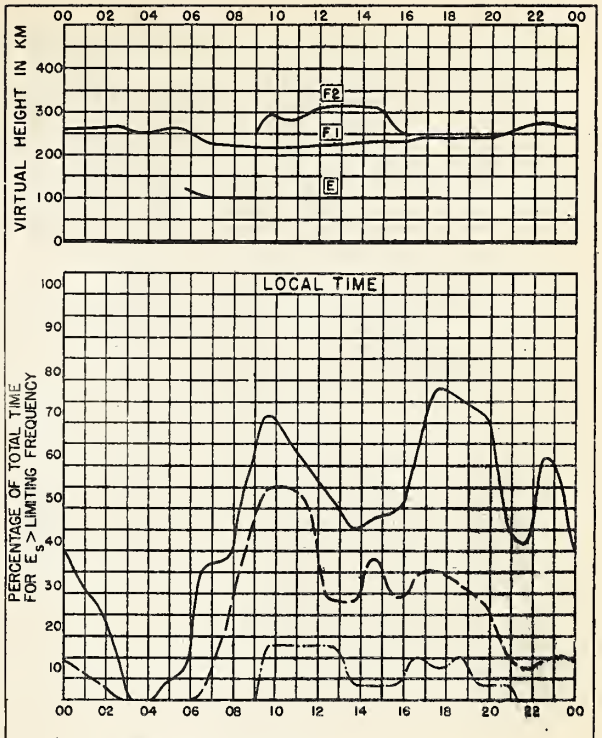

Fig. 26. WUCHANG, CHINA SEPTEMBER 1947

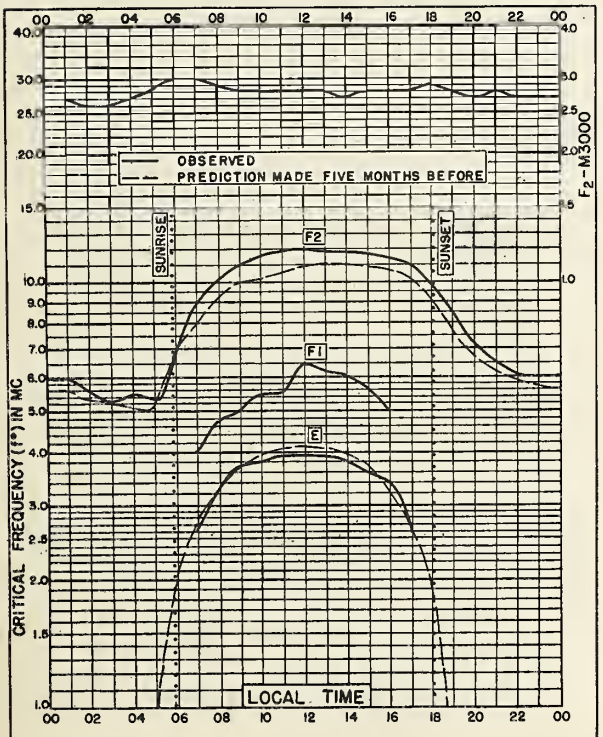

Fig. 27. BATON ROUGE, LOUISIANA
30.5°N, 91.2°W SEPTEMBER 1947

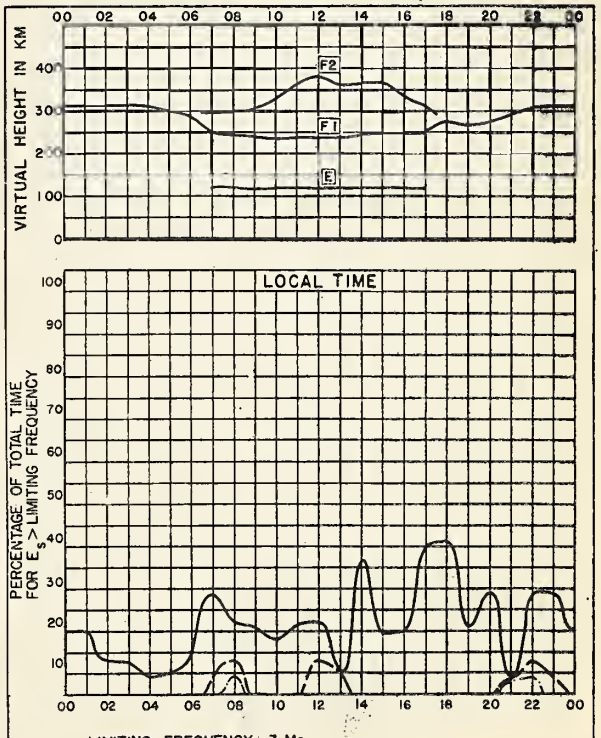

Fig. 28. BATON ROUGE, LOUISIANA SEPTEMBER 1947

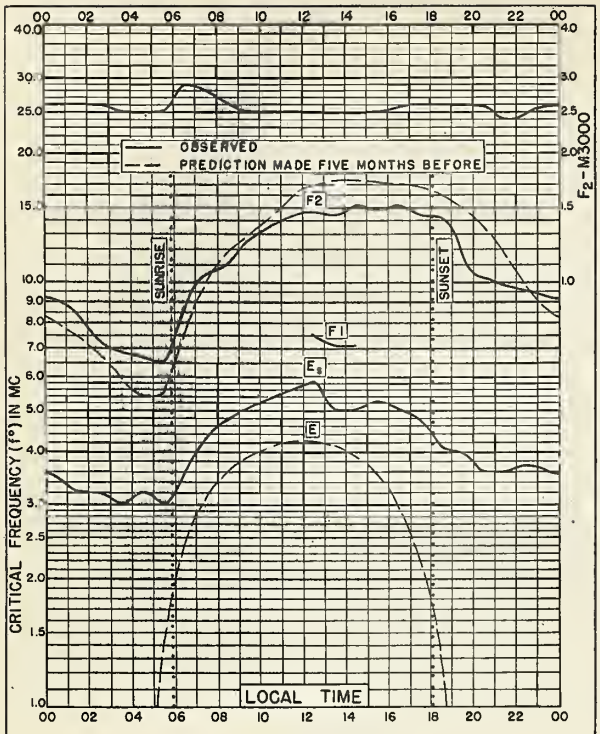

Fig. 29. OKINAWA I.
26.3°N, 127.8°E SEPTEMBER 1947

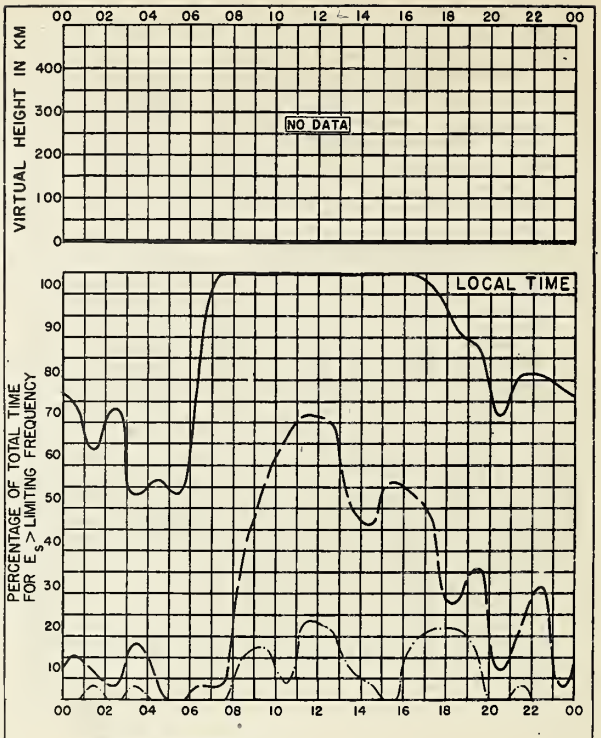

Fig. 30. OKINAWA I. SEPTEMBER 1947

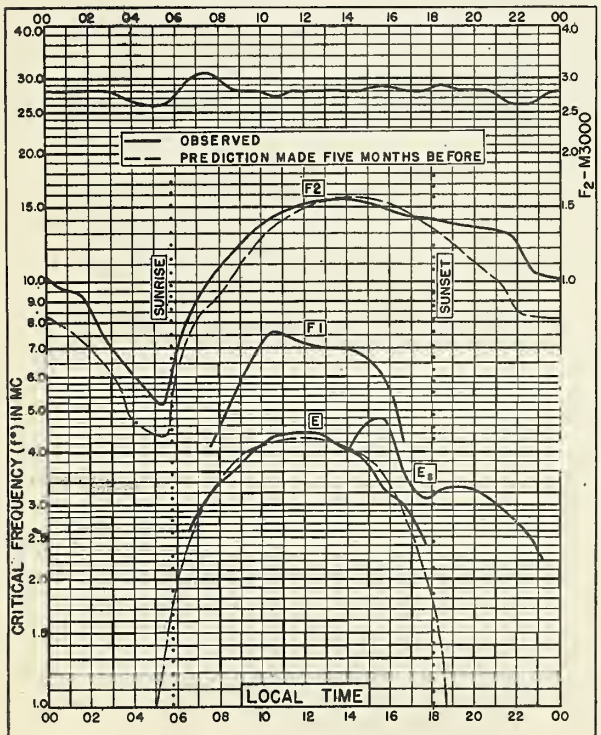

Fig. 31. MAUI, HAWAII
20.8°N, 156.5°W SEPTEMBER 1947

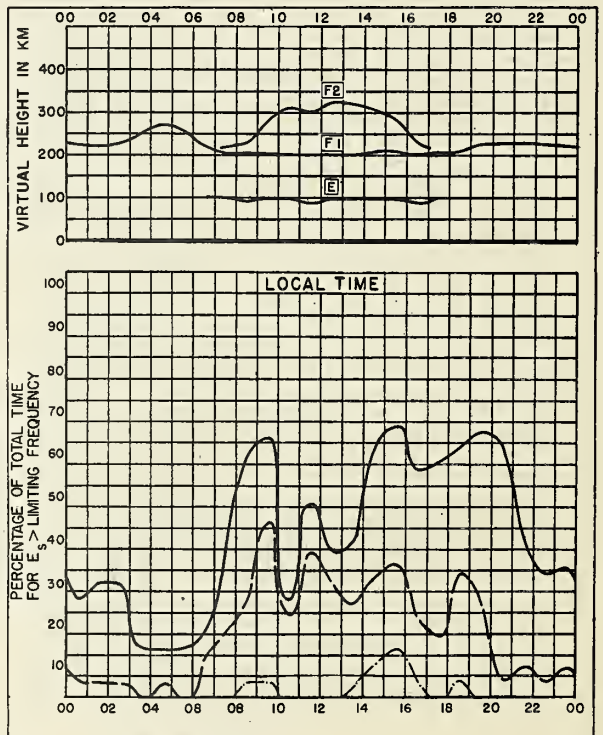

Fig. 32. MAUI, HAWAII SEPTEMBER 1947

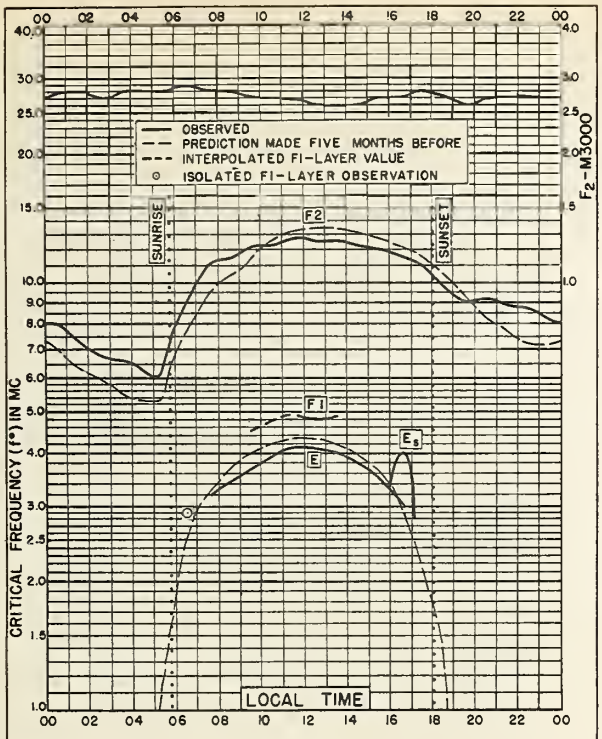

Fig. 33. SAN JUAN, PUERTO RICO
18.4°N, 66.1°W SEPTEMBER 1947

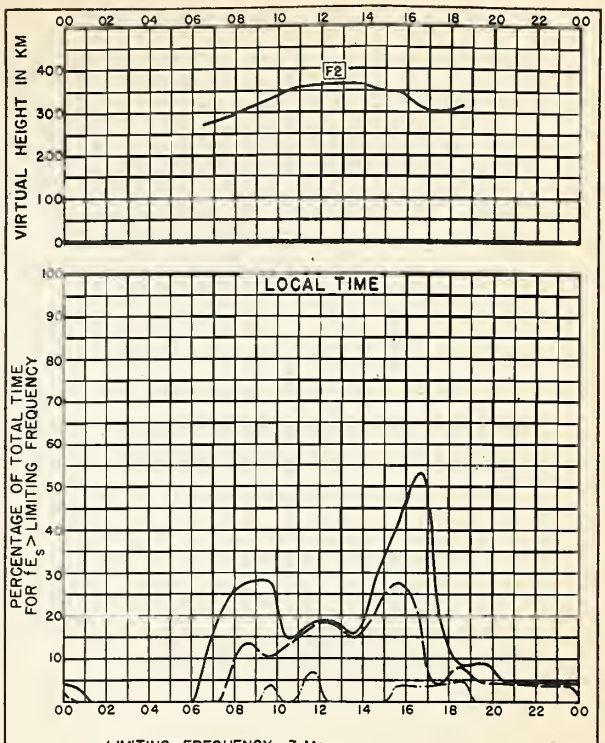

Fig. 34. SAN JUAN, PUERTO RICO SEPTEMBER 1947

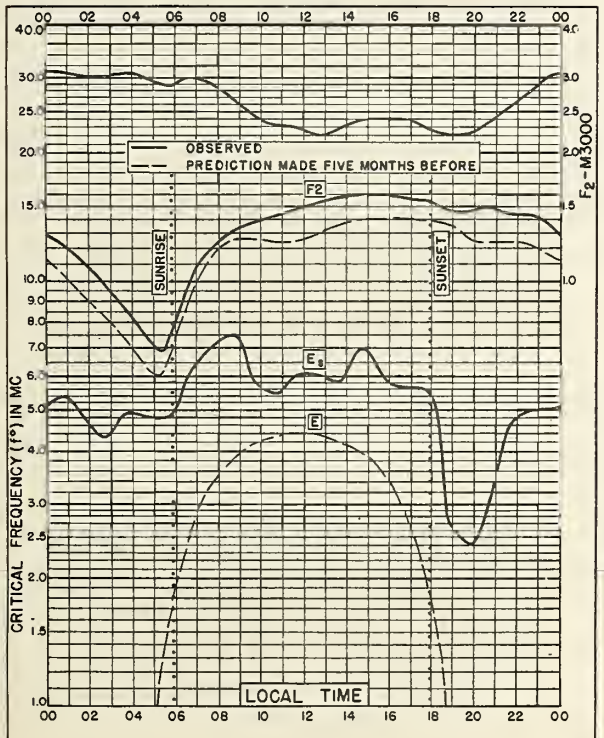

Fig. 35. GUAM I.
13.5°N, 144.8°E SEPTEMBER 1947

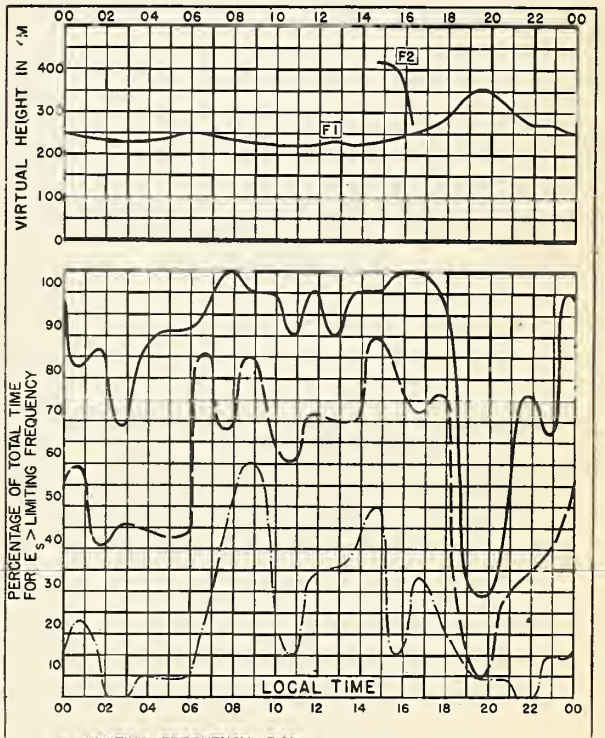

Fig. 36. GUAM I. SEPTEMBER 1947

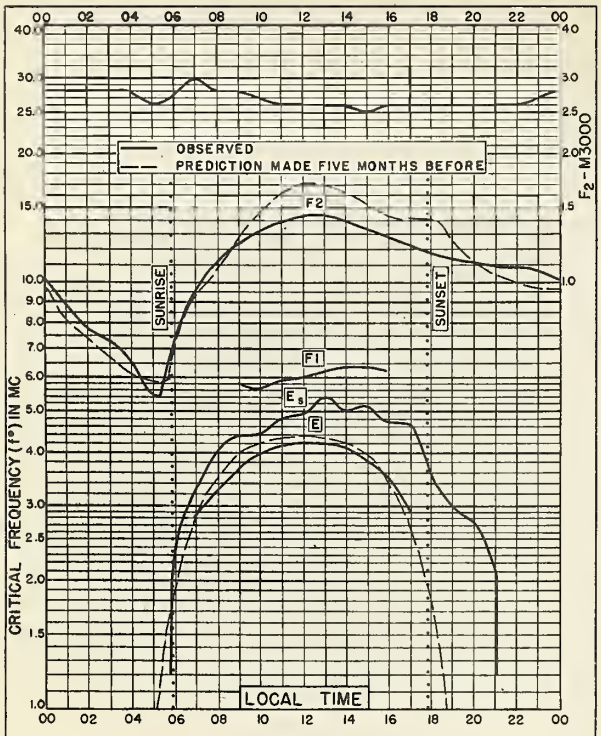

Fig. 37. TRINIDAD, BRIT. WEST INDIES
10.6°N, 61.2°W SEPTEMBER 1947

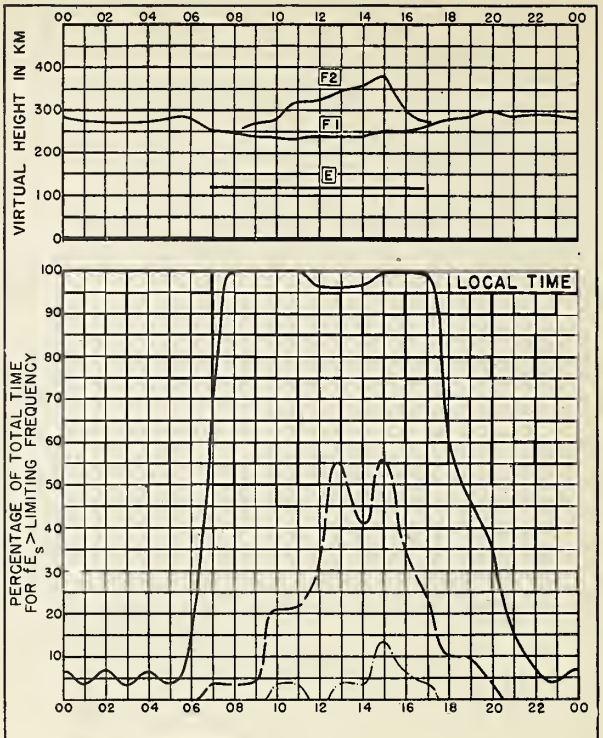

Fig. 38. TRINIDAD, BRIT. WEST INDIES SEPTEMBER 1947

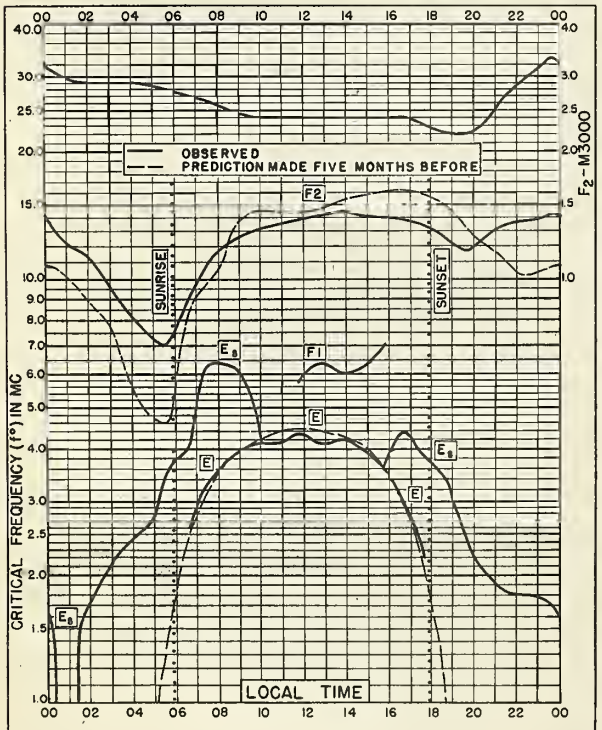

Fig. 39. PALMYRA I.
5.9°N, 162.1°W SEPTEMBER 1947

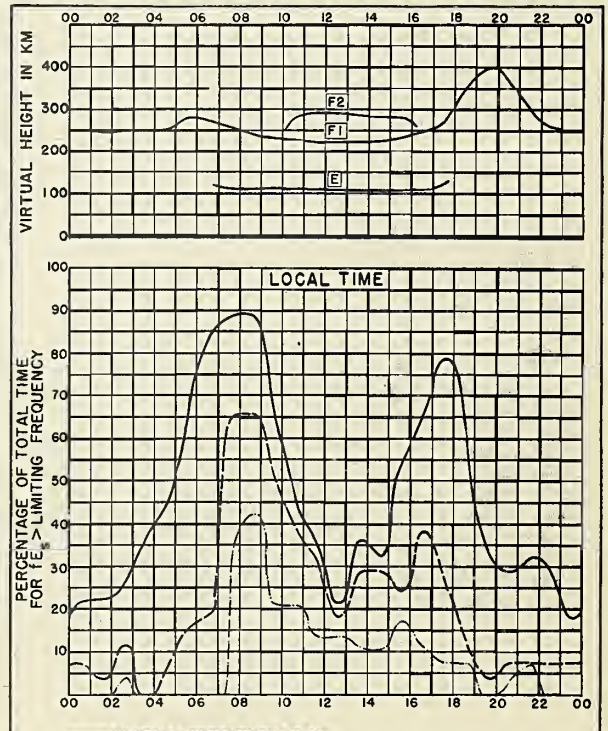

Fig. 40. PALMYRA I. SEPTEMBER 1947

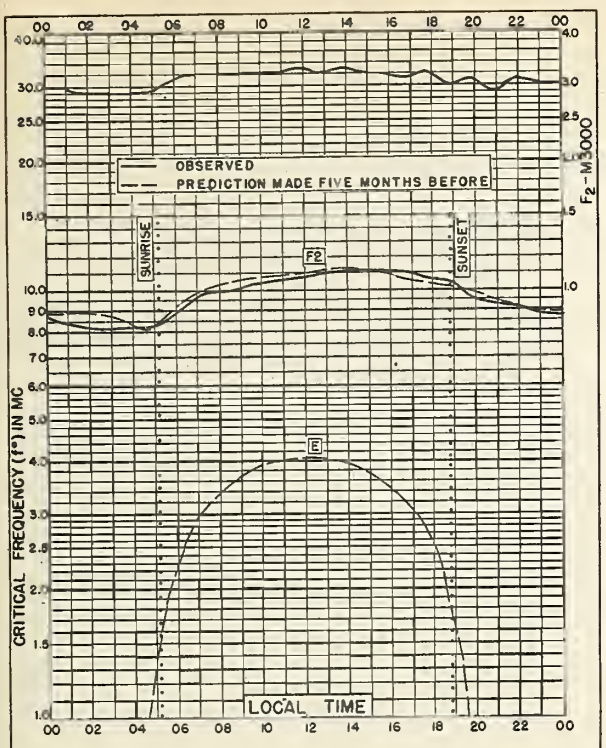

Fig. 41. PEIPING, CHINA
39.9°N, 116.4°E AUGUST 1947

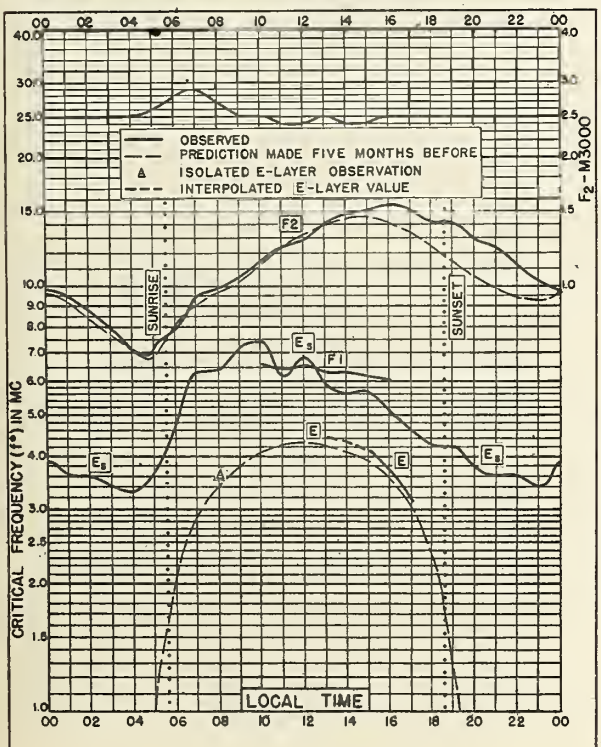

Fig. 42. CHUNGKING, CHINA
29.4°N, 106.8°E AUGUST 1947

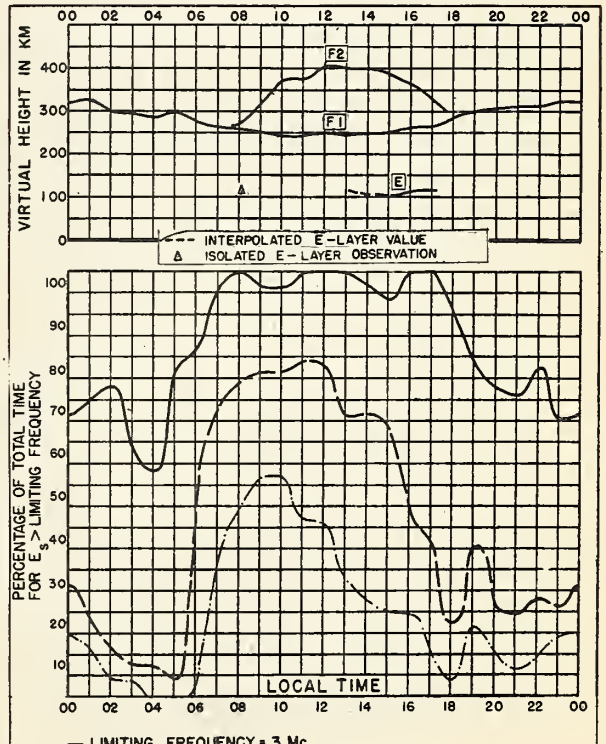

Fig. 43. CHUNGKING, CHINA AUGUST 1947

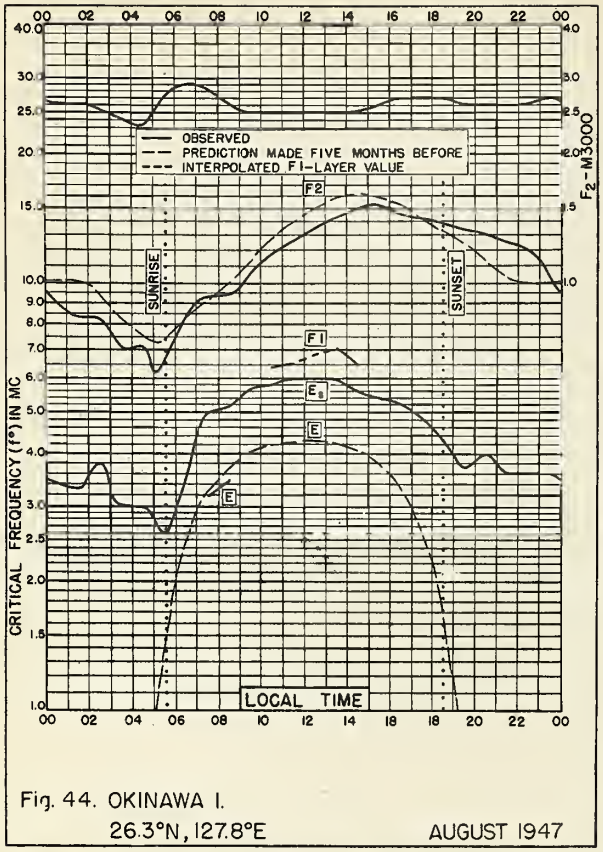

Fig. 44. OKINAWA I.
26.3°N, 127.8°E AUGUST 1947

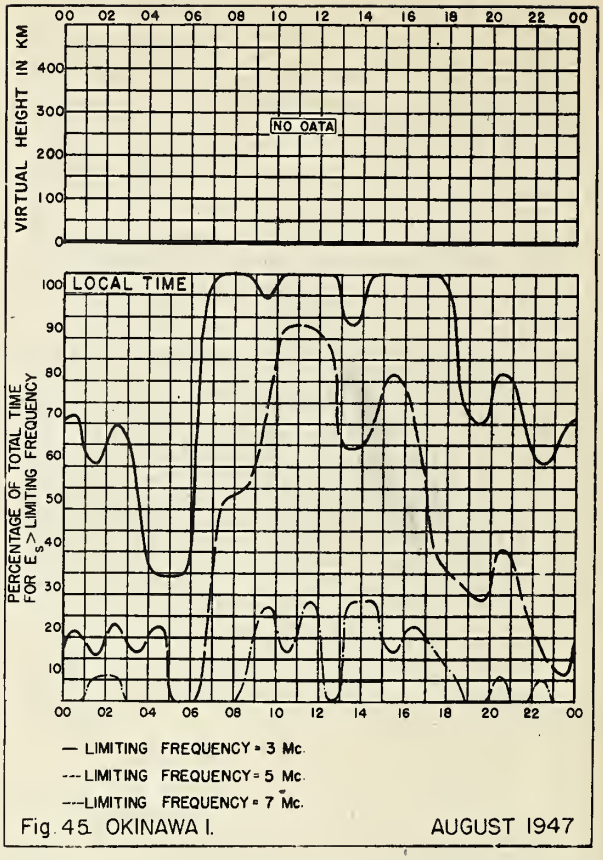

Fig. 45. OKINAWA I. AUGUST 1947

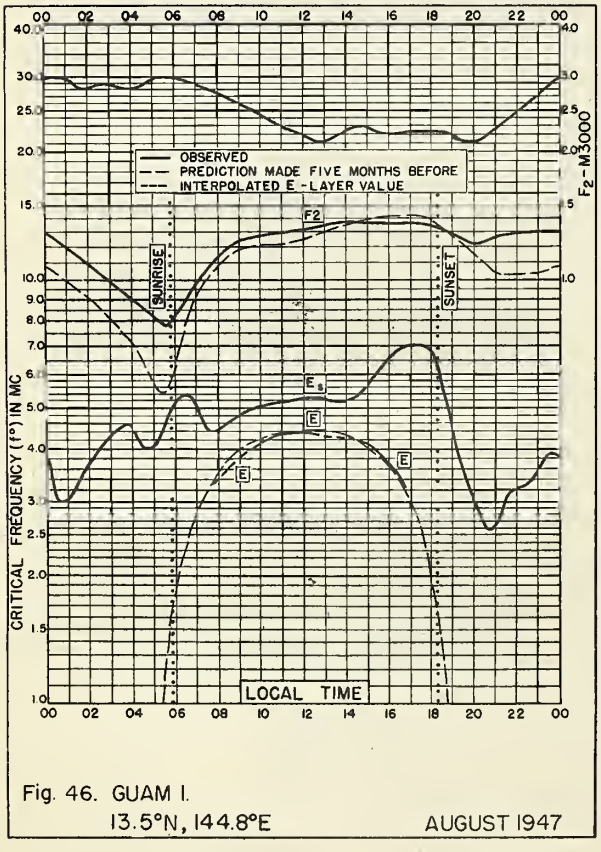

Fig. 46. GUAM I.
13.5°N, 144.8°E AUGUST 1947

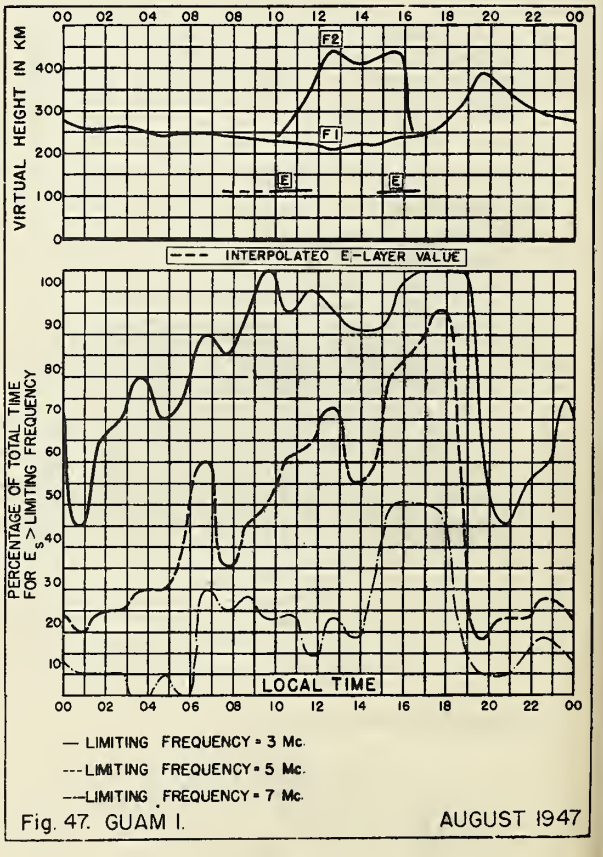

Fig. 47. GUAM I. AUGUST 1947

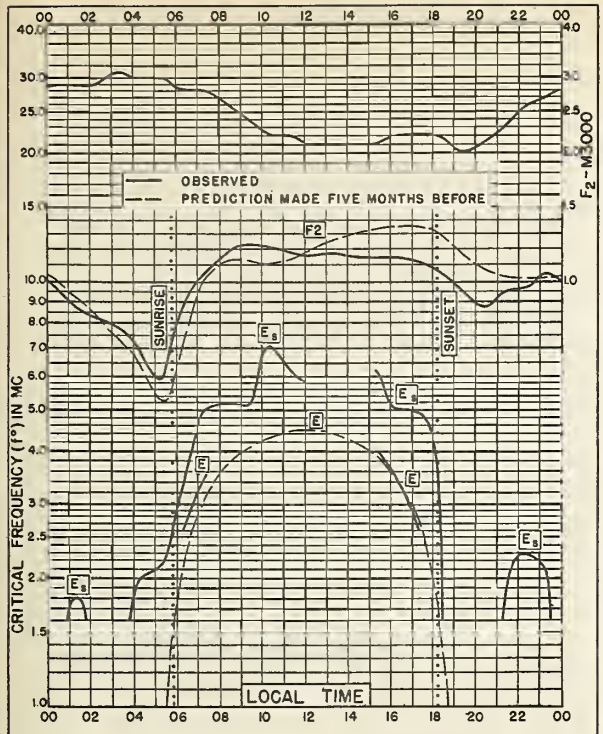

Fig. 48. LEYTE, PHILIPPINE IS.
11.0°N, 125.0°E AUGUST 1947

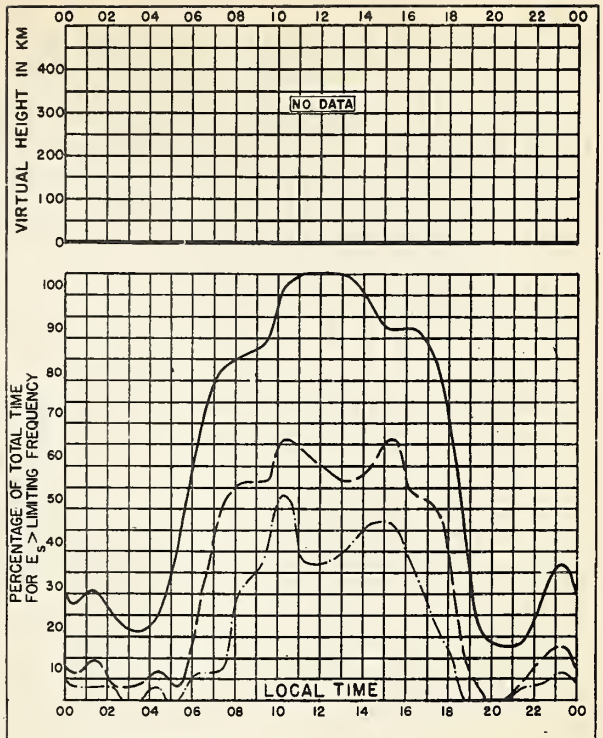

Fig. 49. LEYTE, PHILIPPINE IS. AUGUST 1947

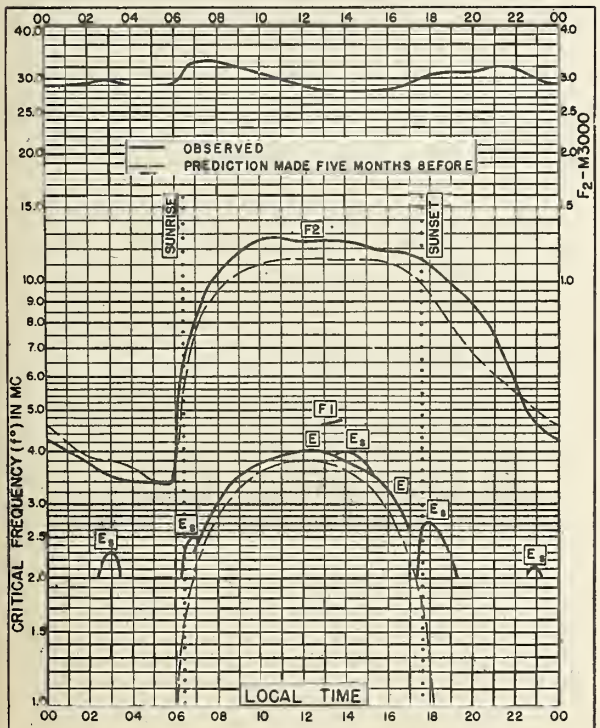

Fig. 50. JOHANNESBURG, U. OF S. AFRICA
26.2°S, 28.0°E AUGUST 1947

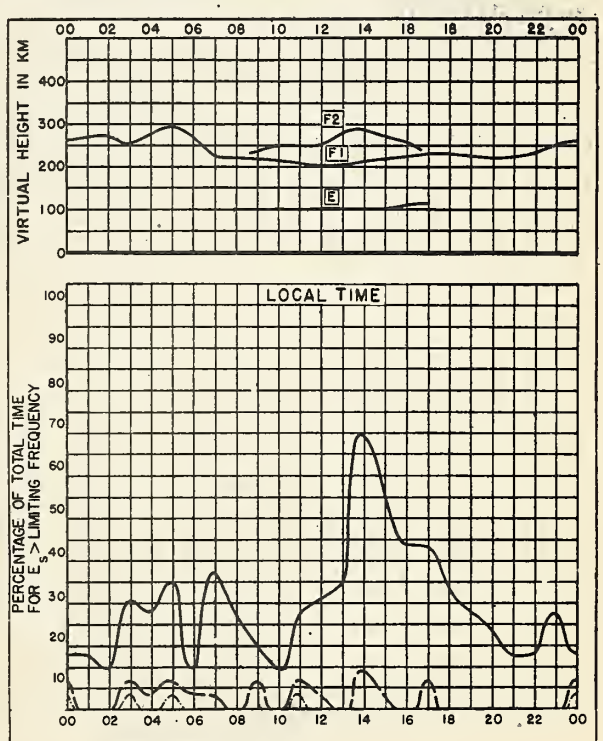

Fig. 51. JOHANNESBURG, U. OF S. AFRICA AUGUST 1947

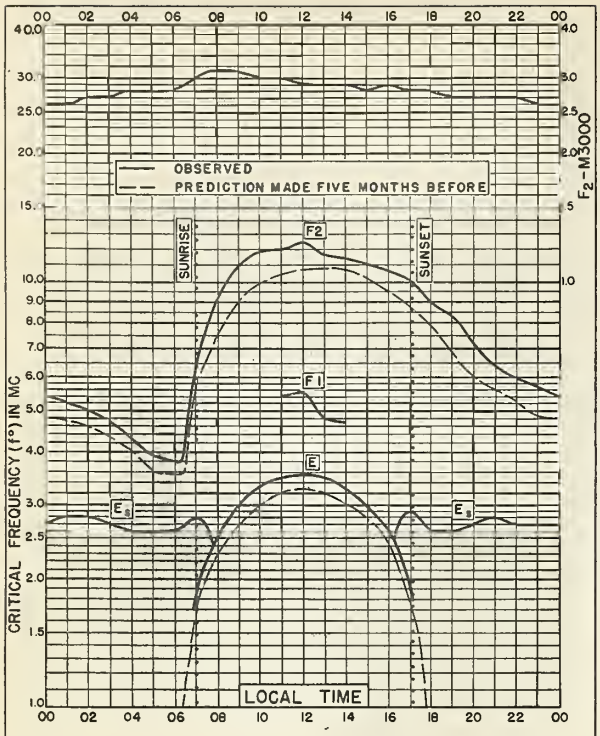

Fig. 52. CHRISTCHURCH, N.Z.
43.5°S, 172.7°E AUGUST 1947

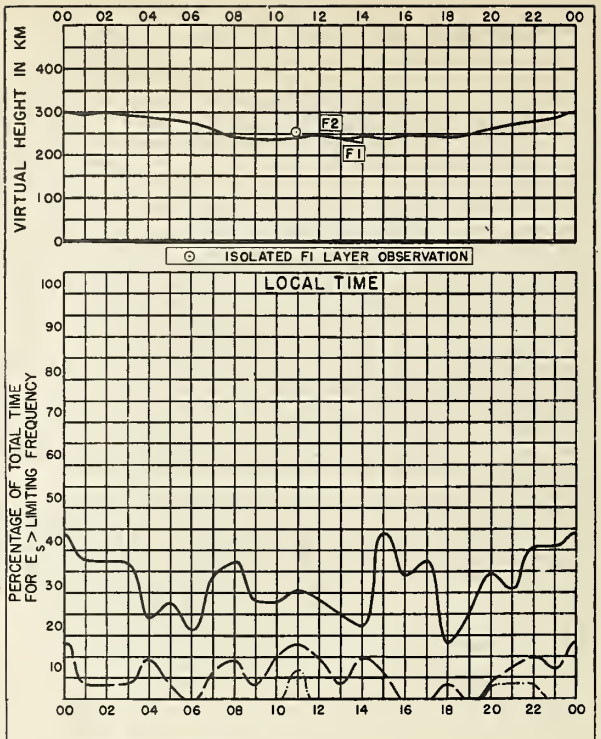

Fig. 53. CHRISTCHURCH, N.Z. AUGUST 1947

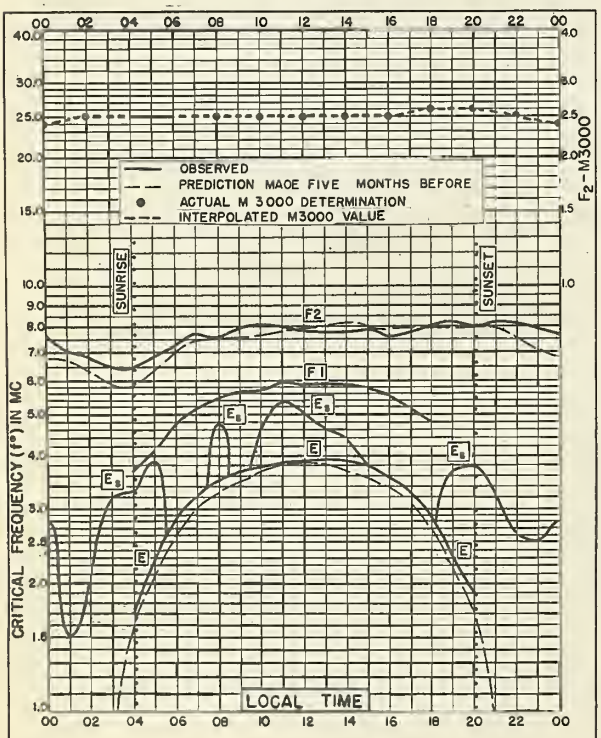

Fig. 54. SLOUGH, ENGLAND
51.5°N, 0.6°W JULY 1947

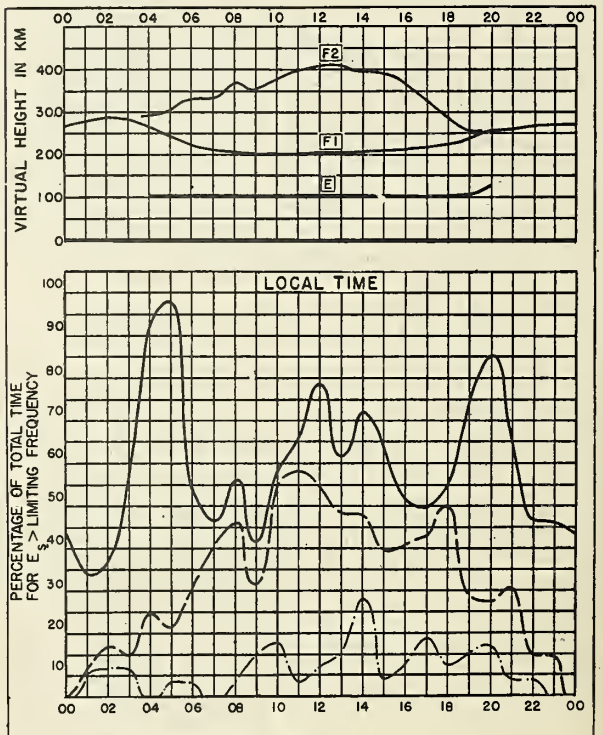

Fig. 55. SLOUGH, ENGLAND JULY 1947

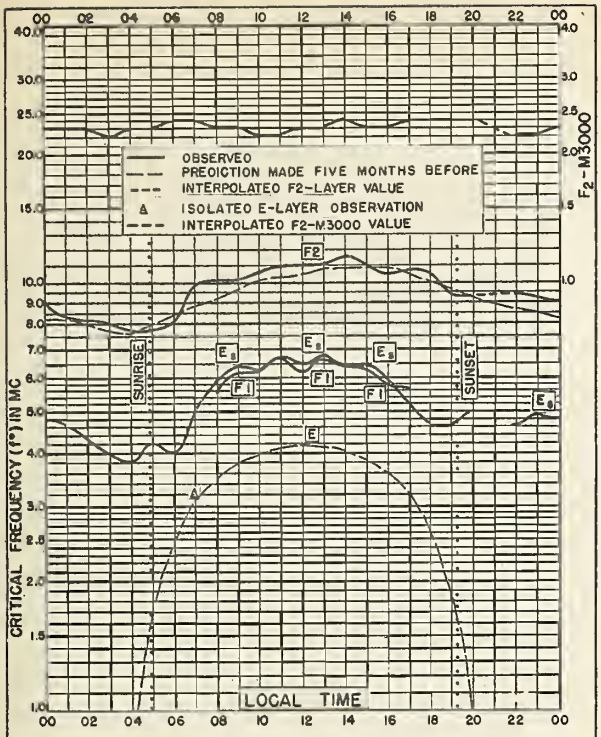

Fig. 56. LANCHOW, CHINA
36.1°N, 103.8°E JULY 1947

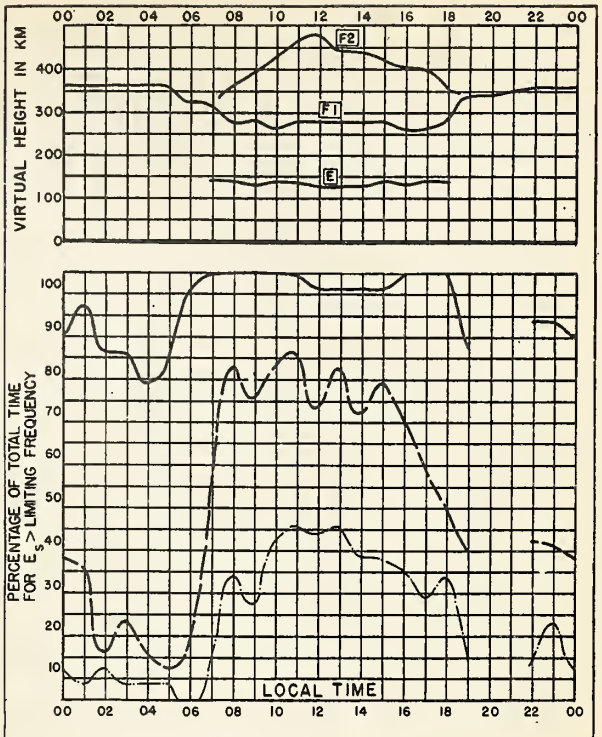

Fig. 57. LANCHOW, CHINA JULY 1947

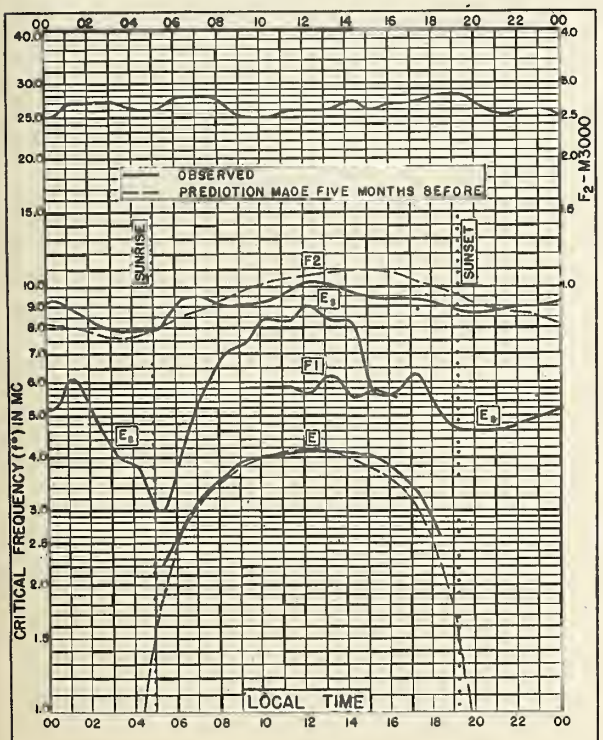

Fig. 58. TOKYO, JAPAN
35.7°N, 139.5°E JULY 1947

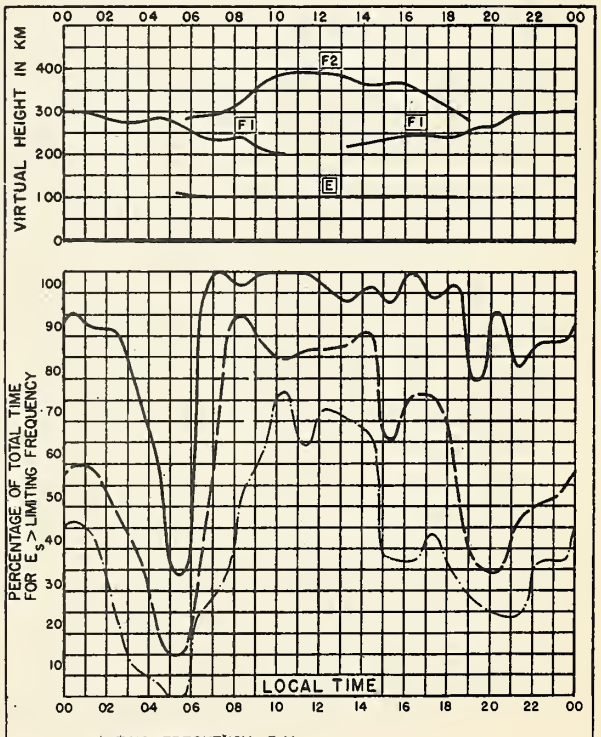

Fig. 59. TOKYO, JAPAN JULY 1947

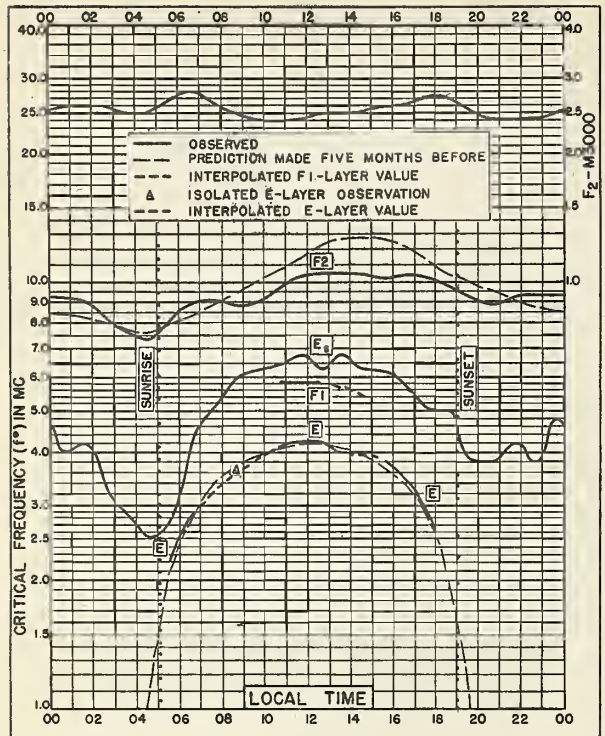

Fig. 60. YAMAKAWA, JAPAN
31.2°N, 130.6°E JULY 1947

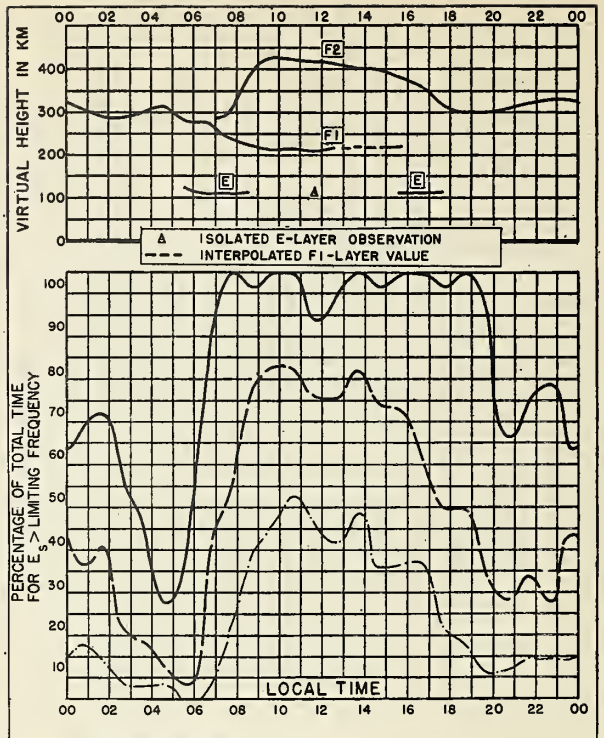

Fig. 61. YAMAKAWA, JAPAN JULY 1947

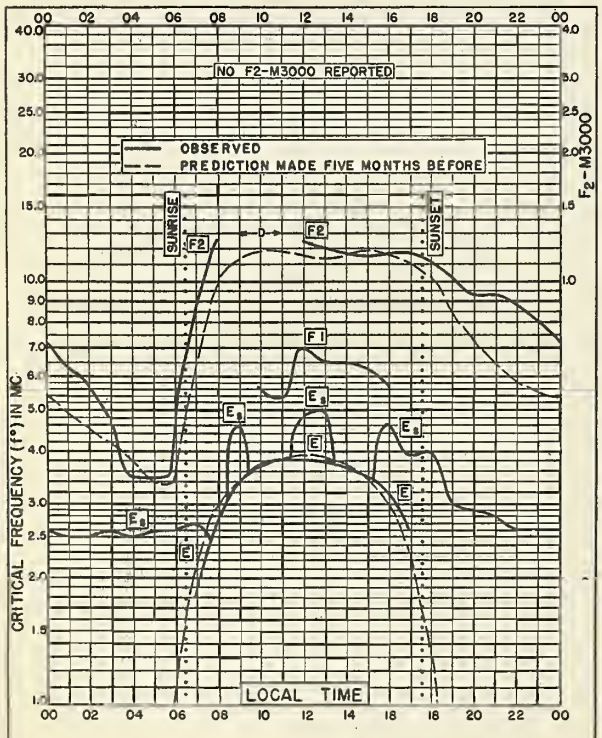

Fig. 62. FIJI IS.
18.0°S, 178.2°E JULY 1947

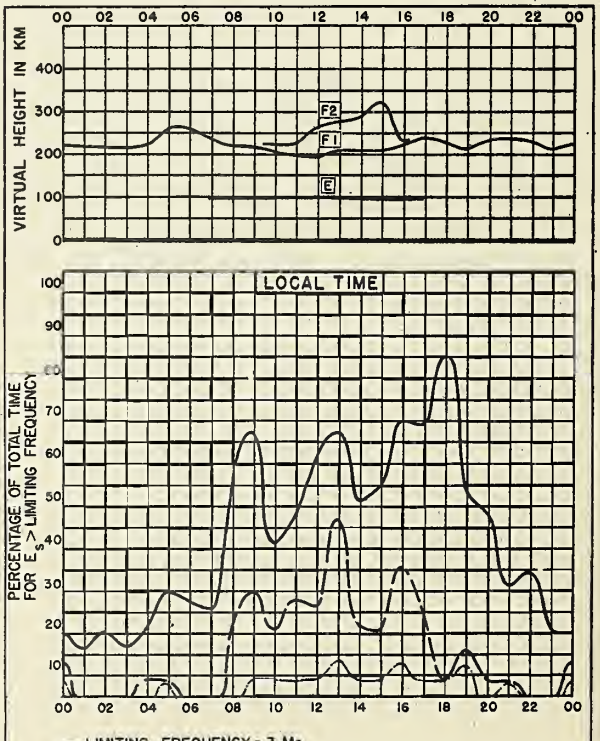

Fig. 63. FIJI IS. JULY 1947

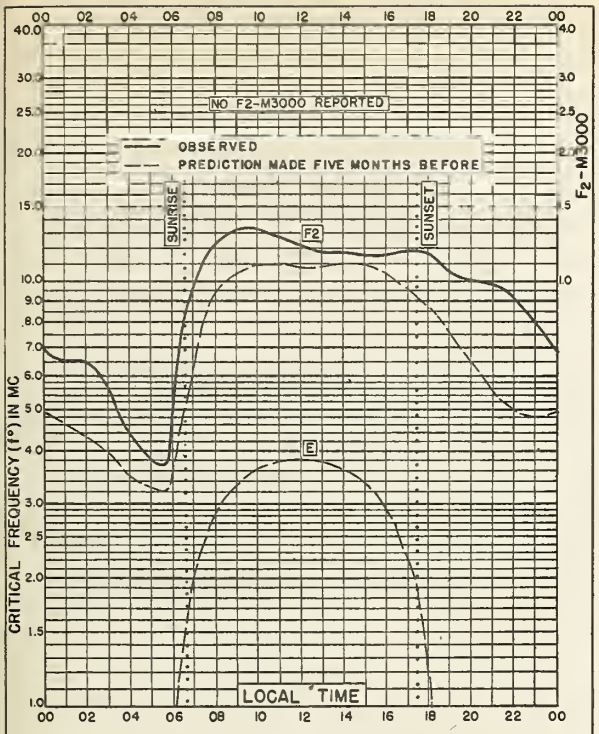

Fig. 64. RAROTONGA I.
21.3°S, 159.8°W
JULY 1947

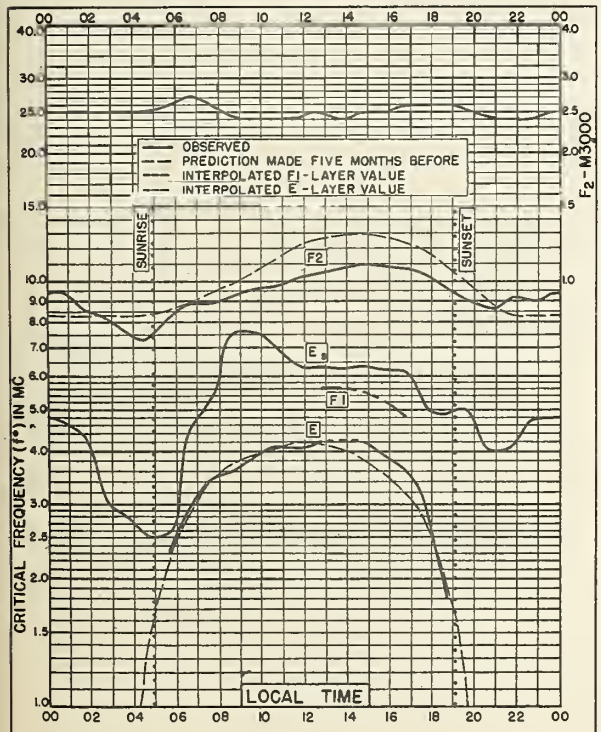

Fig. 65. YAMAKAWA, JAPAN
31.2°N, 130.6°E
JUNE 1947

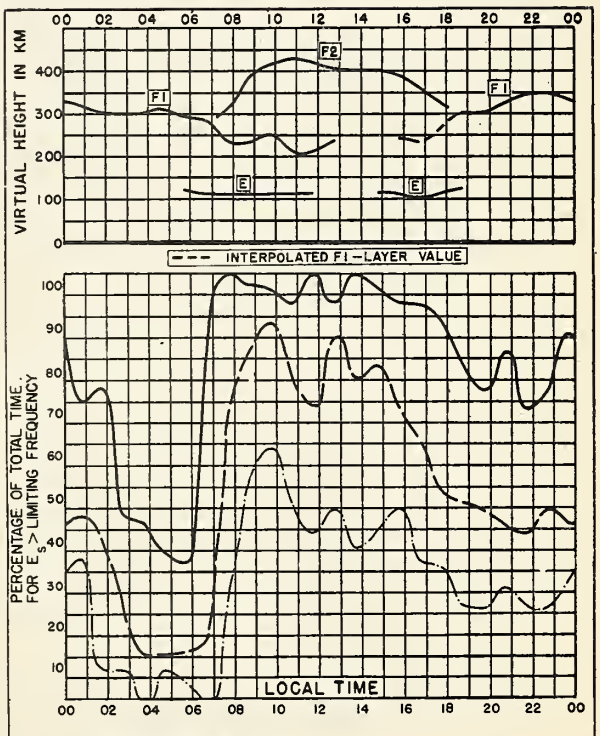

Fig. 66. YAMAKAWA, JAPAN
JUNE 1947

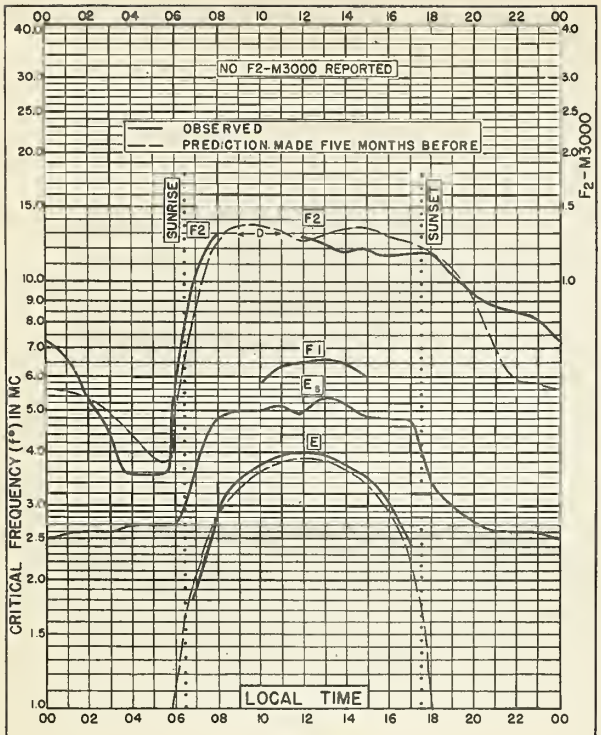

Fig. 67. FIJI IS.
18.0°S, 178.2°E JUNE 1947

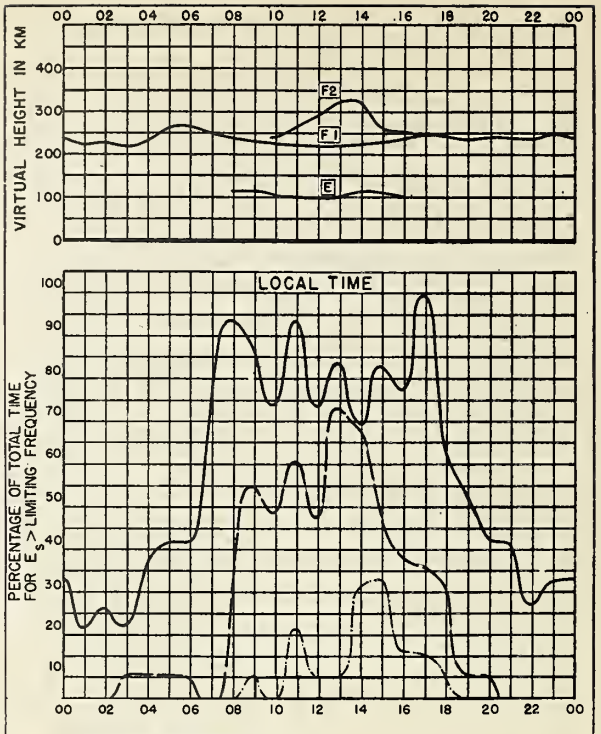

Fig. 68. FIJI IS. JUNE 1947

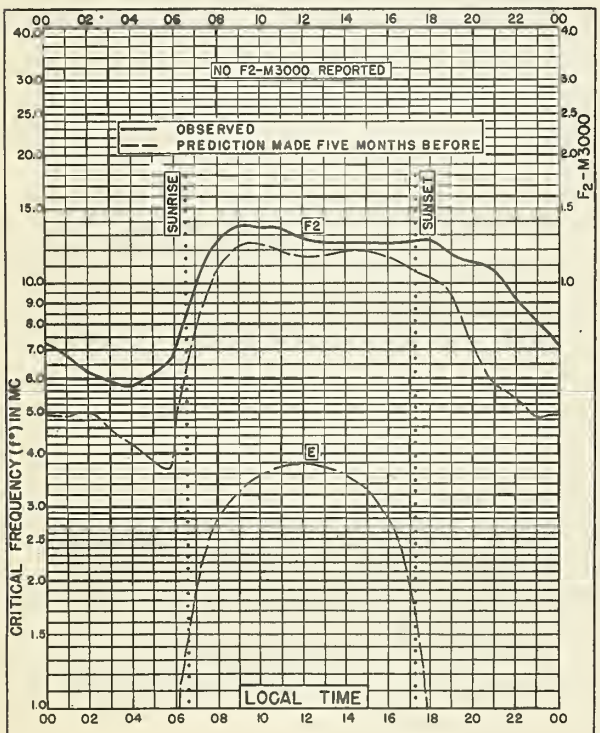

Fig. 69. RAROTONGA I.
21.3°S, 159.8°W JUNE 1947

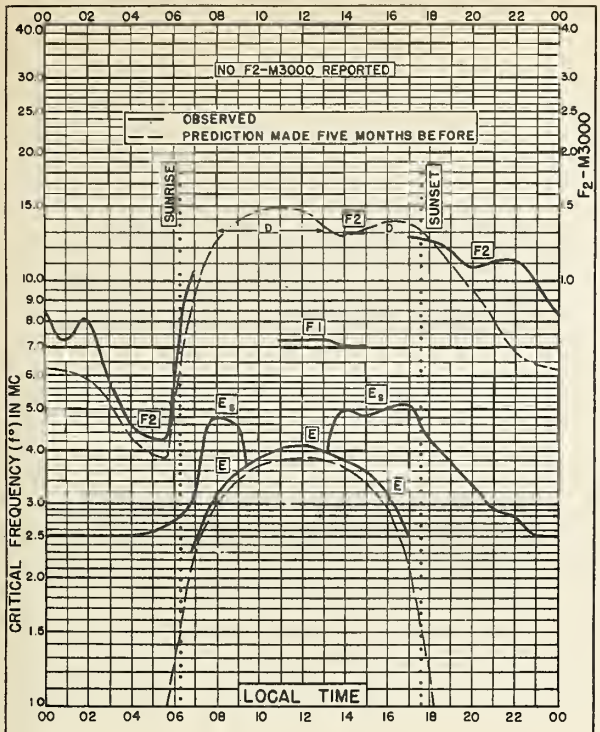

Fig. 70. FIJI IS.
18.0°S, 178.2°E
MAY 1947

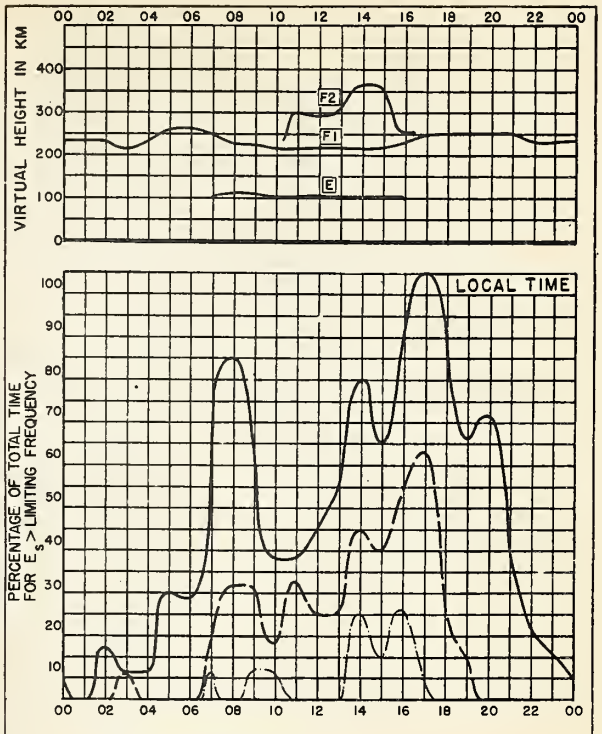

Fig. 71. FIJI IS.
MAY 1947

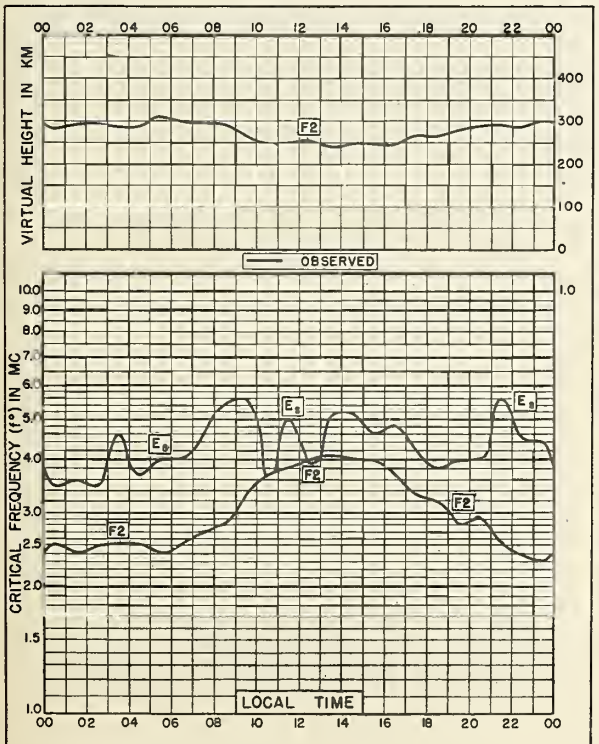

Fig. 72. CLYDE, BAFFIN I.
70.5°N, 68.6°W
DECEMBER 1943

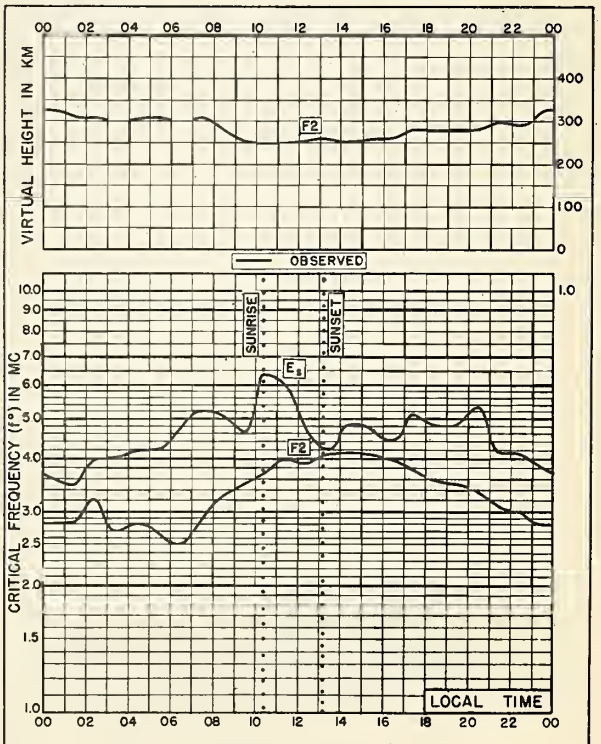

Fig. 73. CLYDE, BAFFIN I.
70.5°N, 68.6°W
NOVEMBER 1943

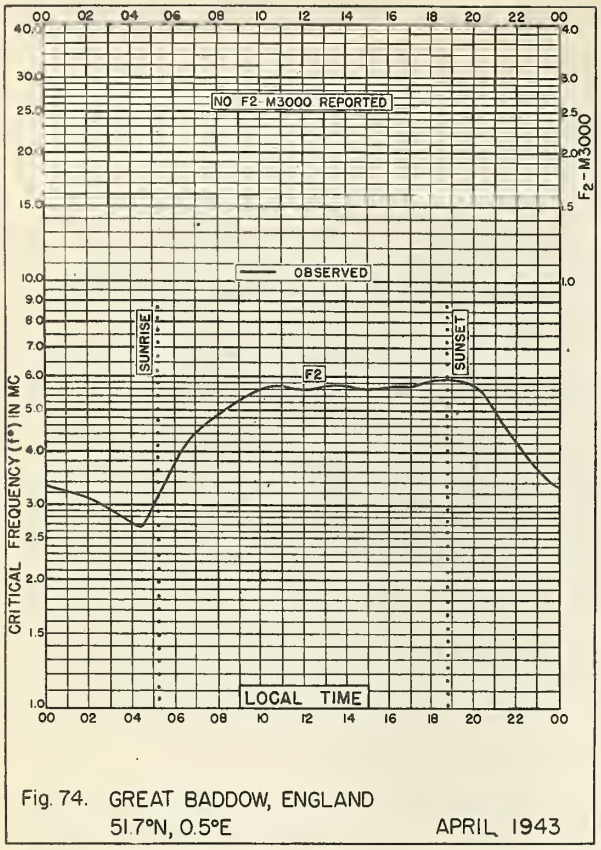

Fig. 74. GREAT BADDOW, ENGLAND
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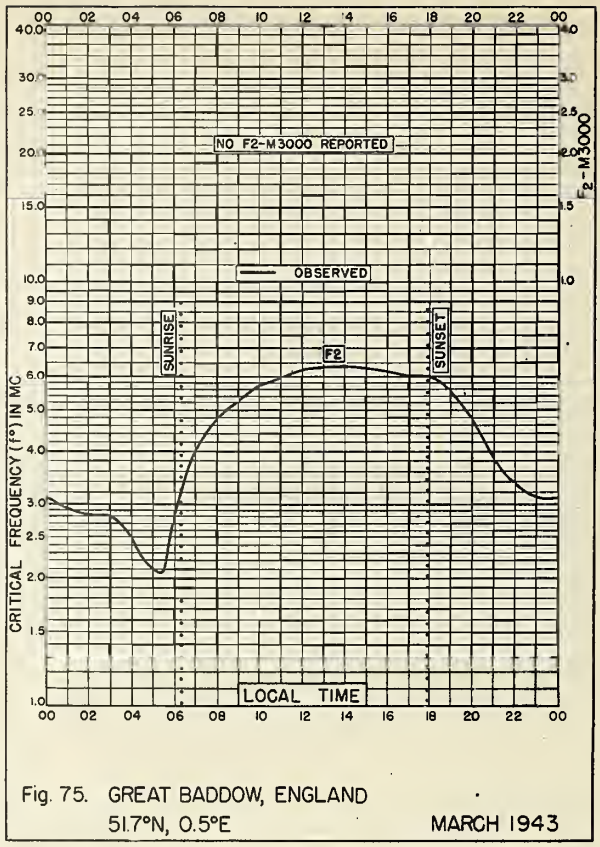

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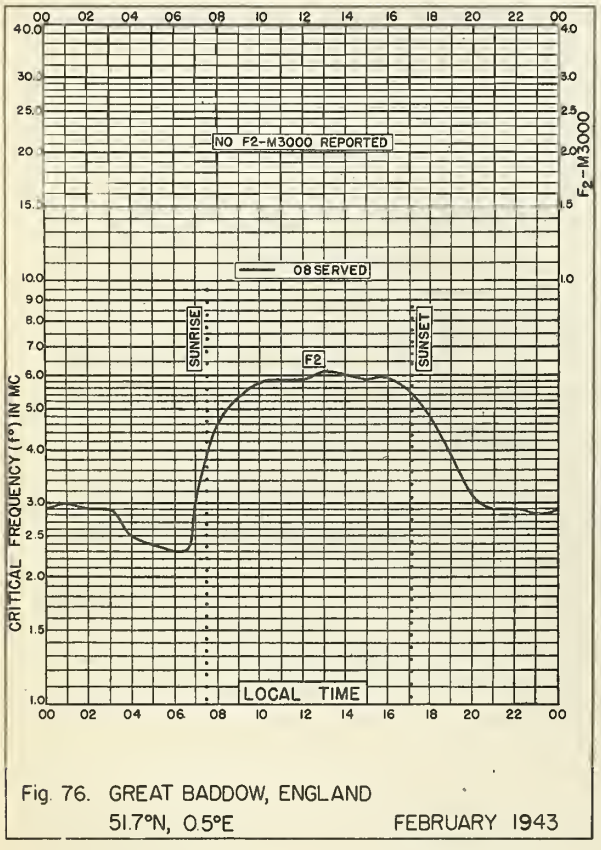

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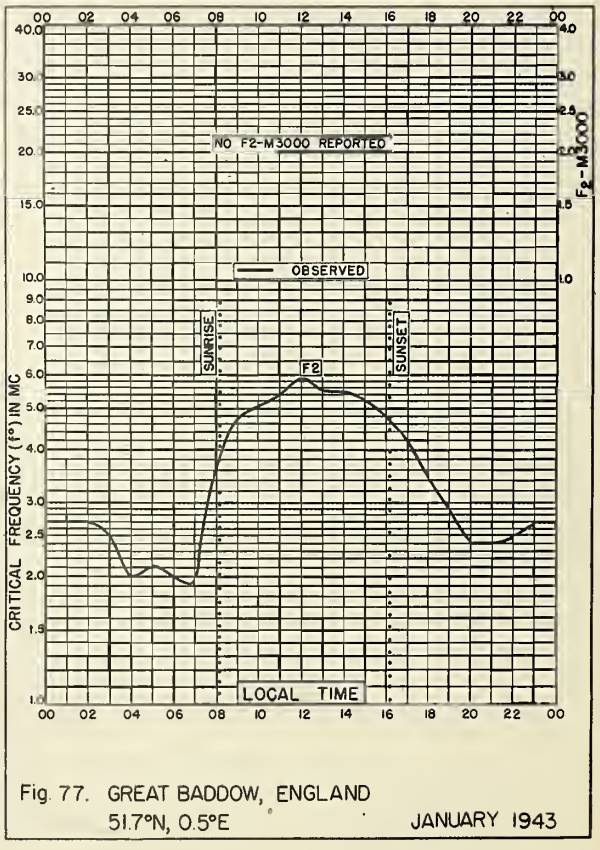

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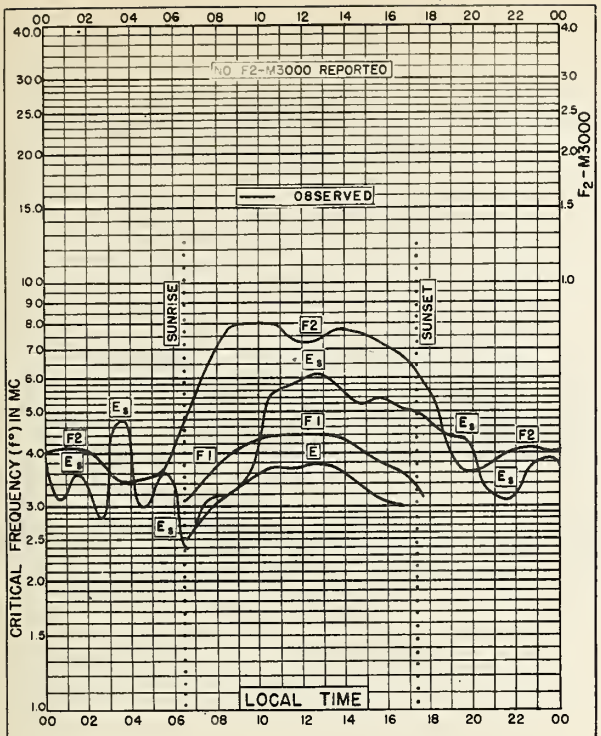

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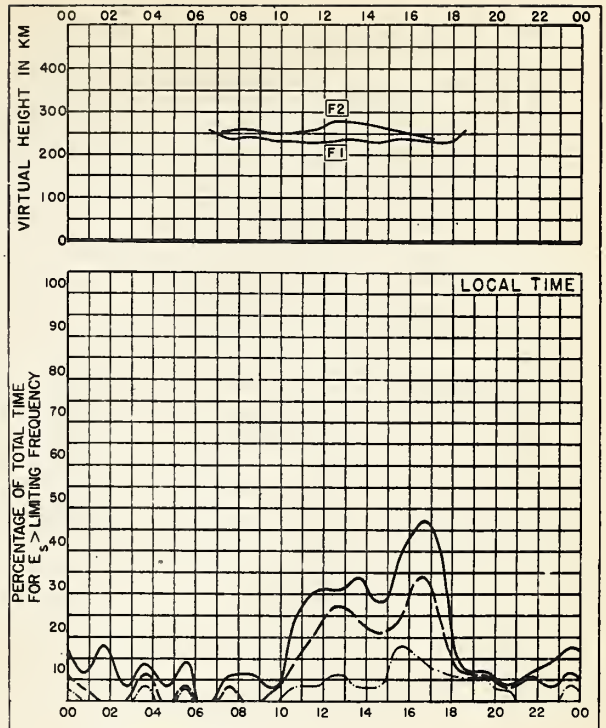

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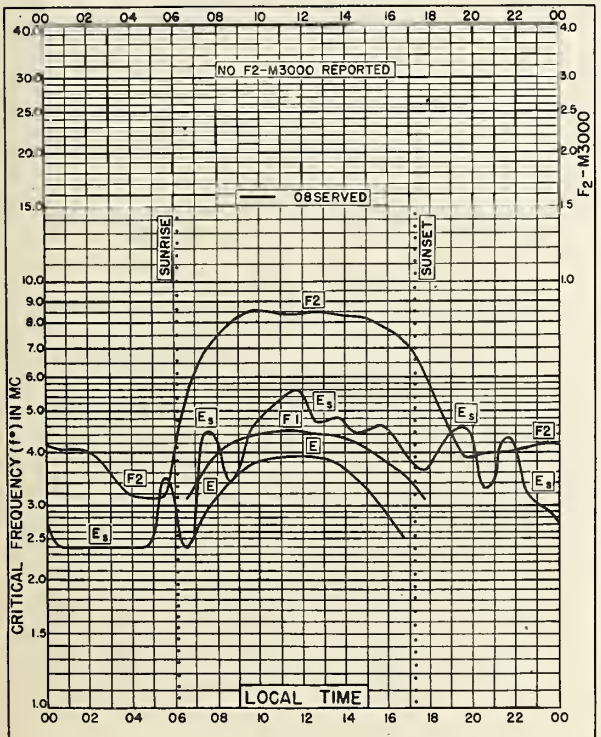

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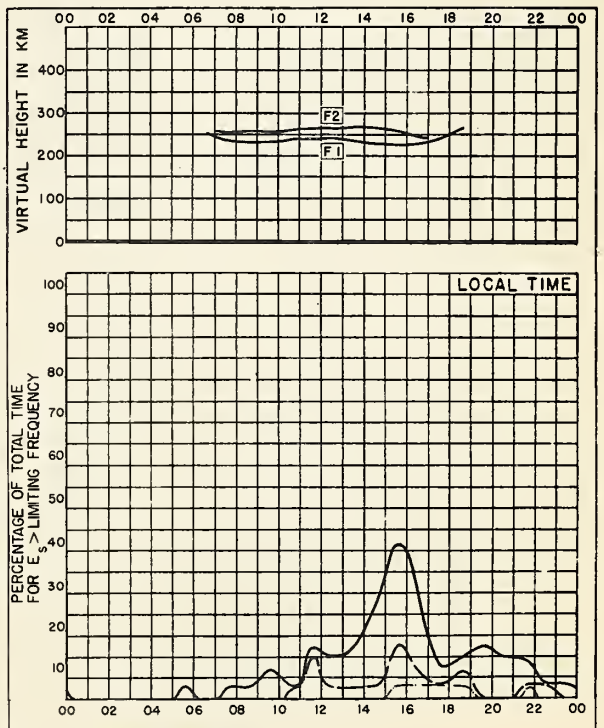

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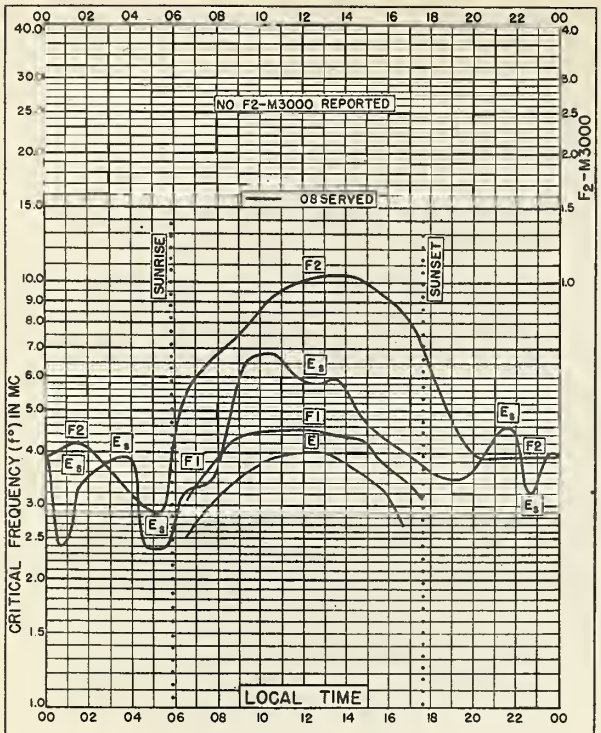

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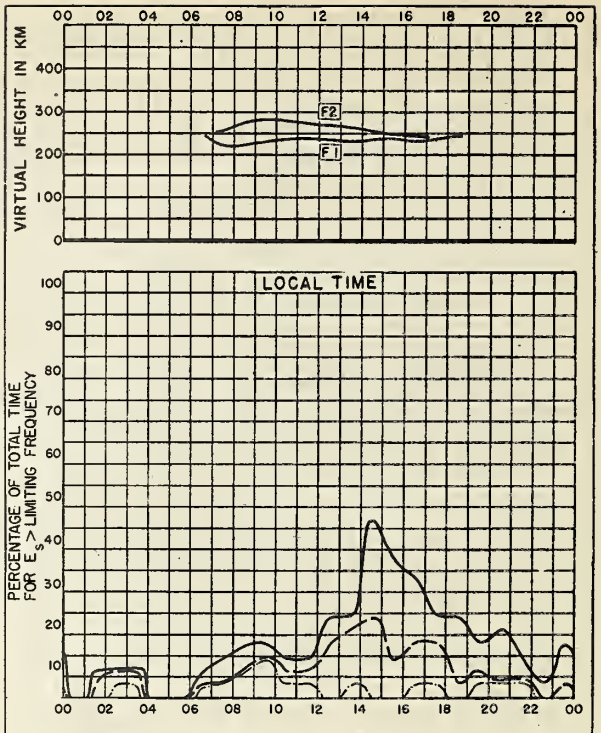

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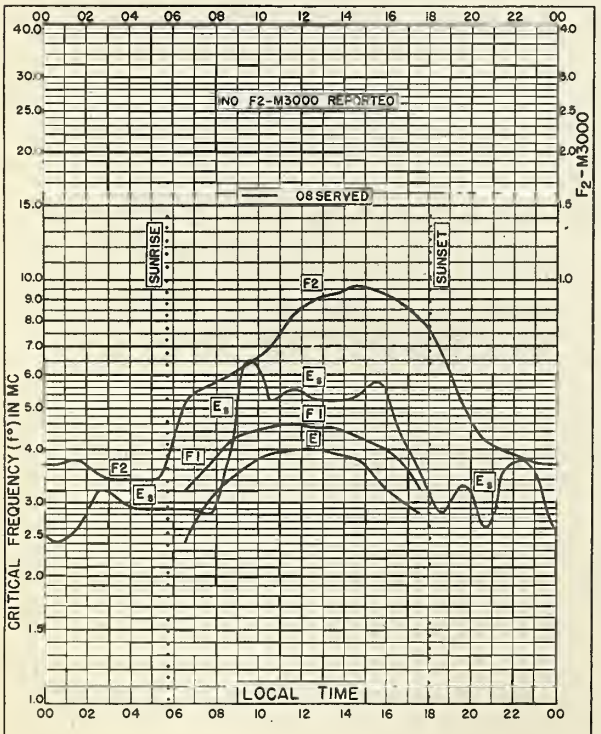

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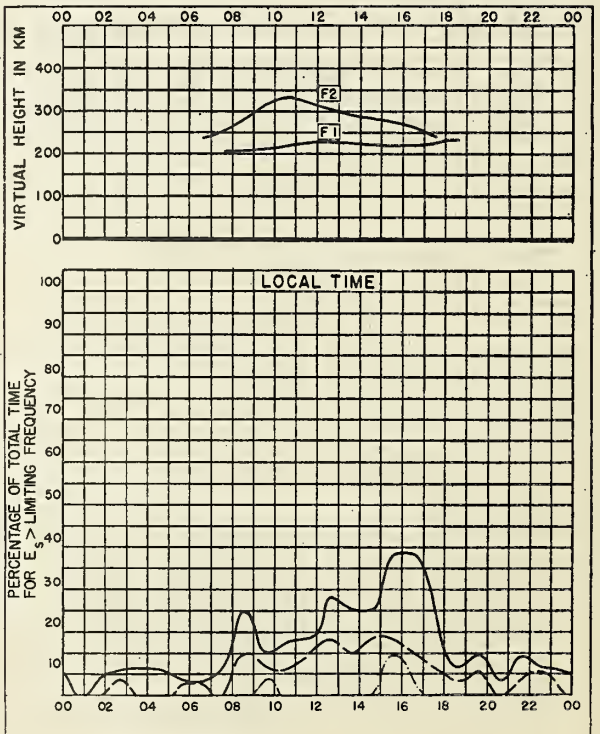

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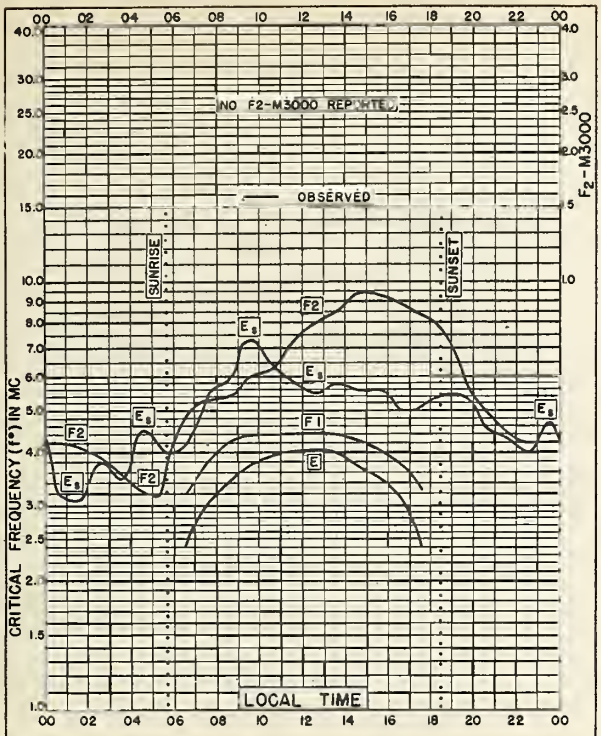

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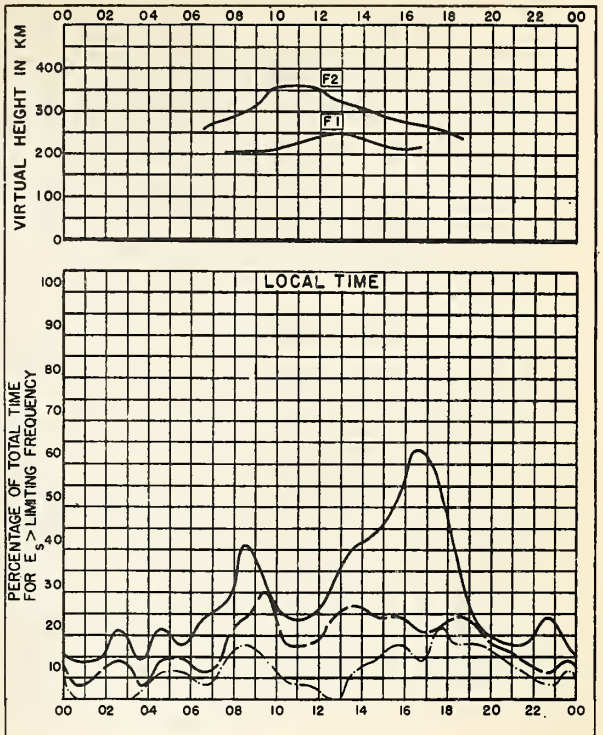

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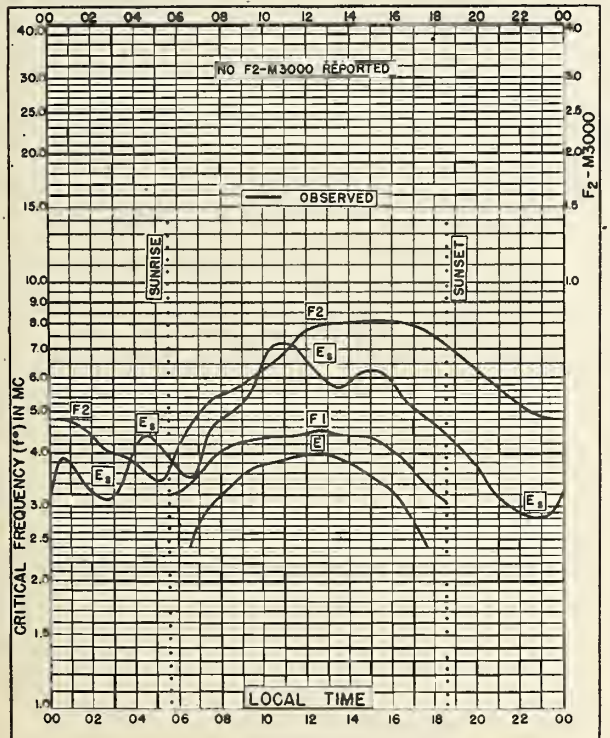

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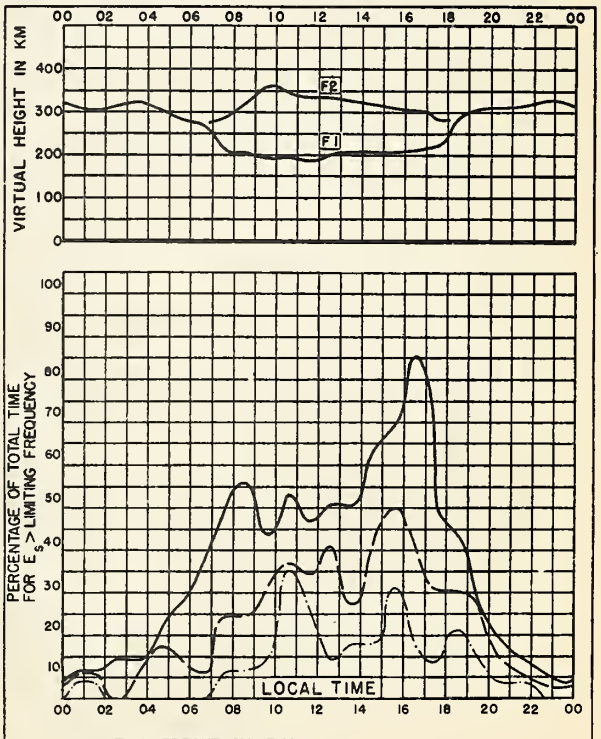

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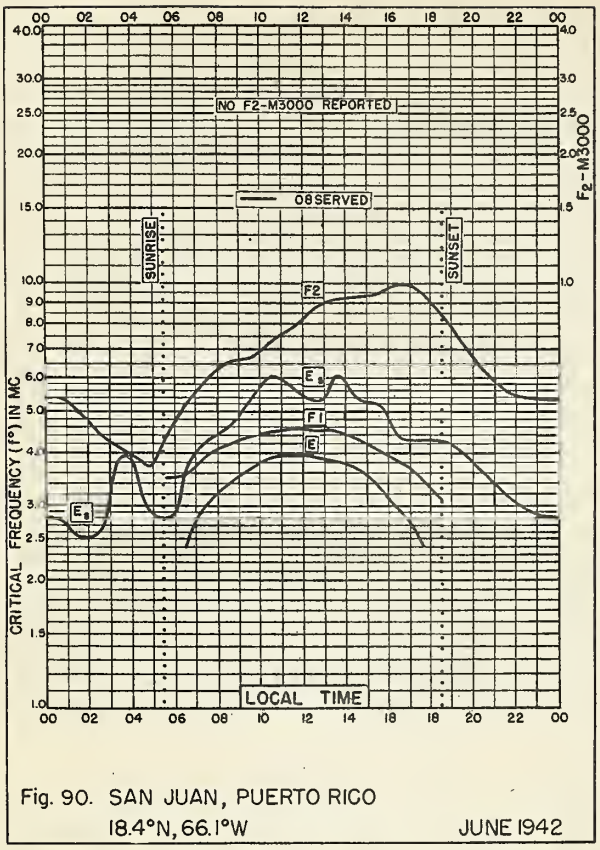

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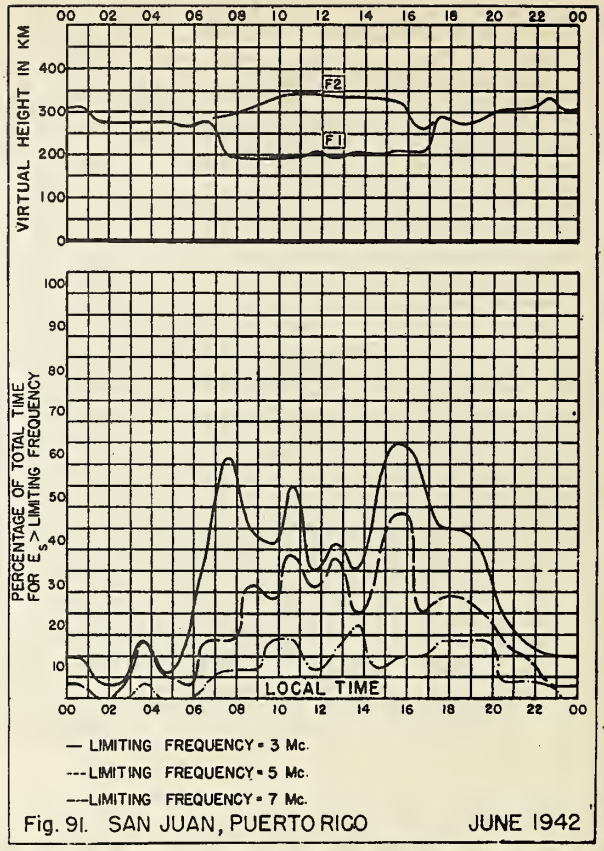

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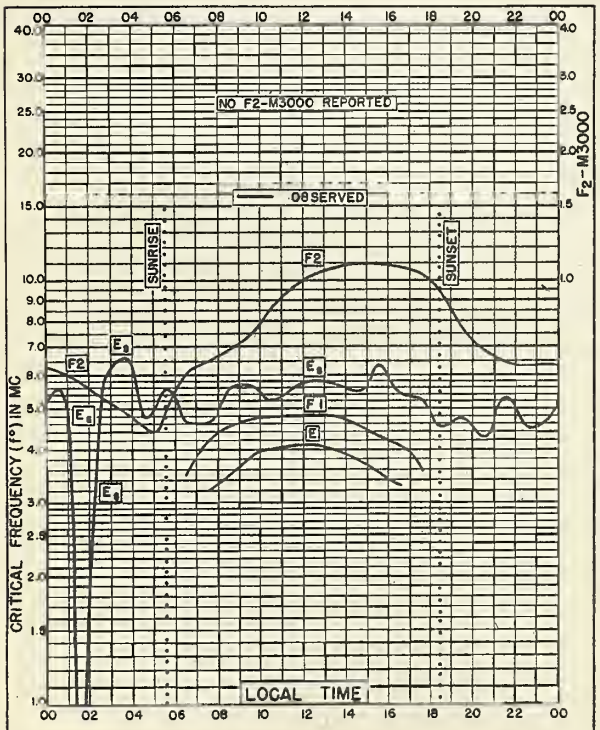

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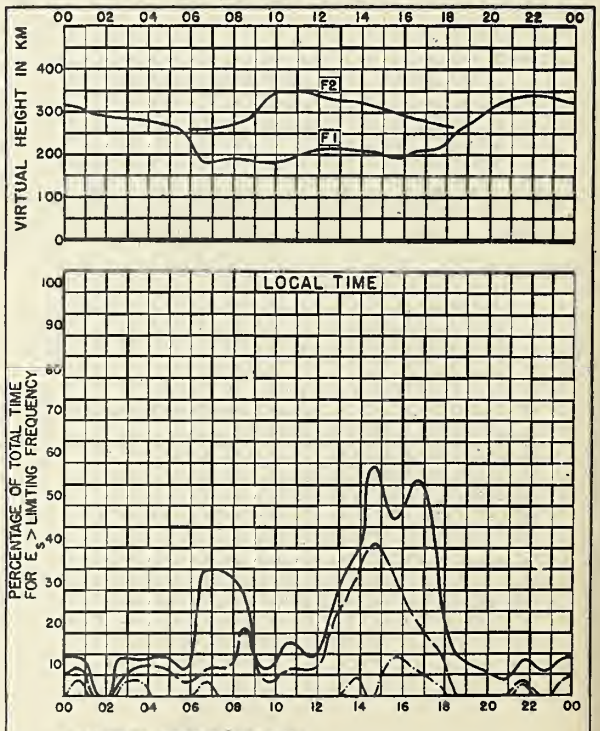

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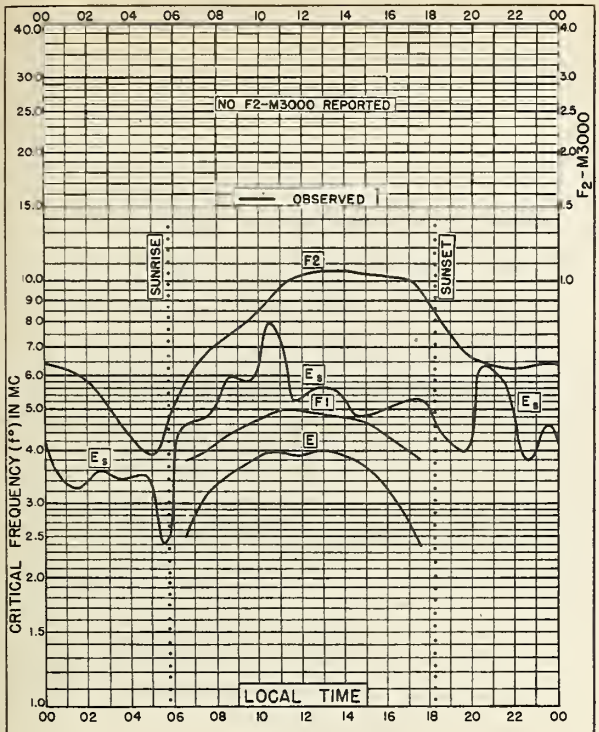

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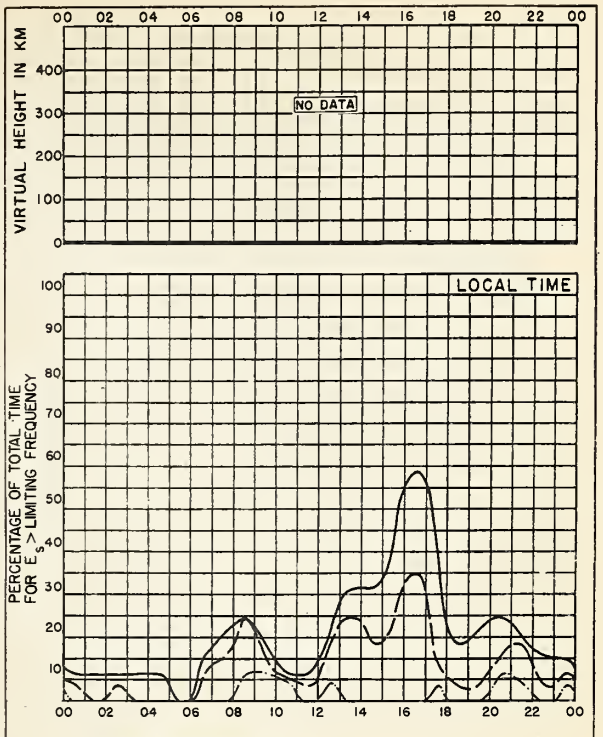

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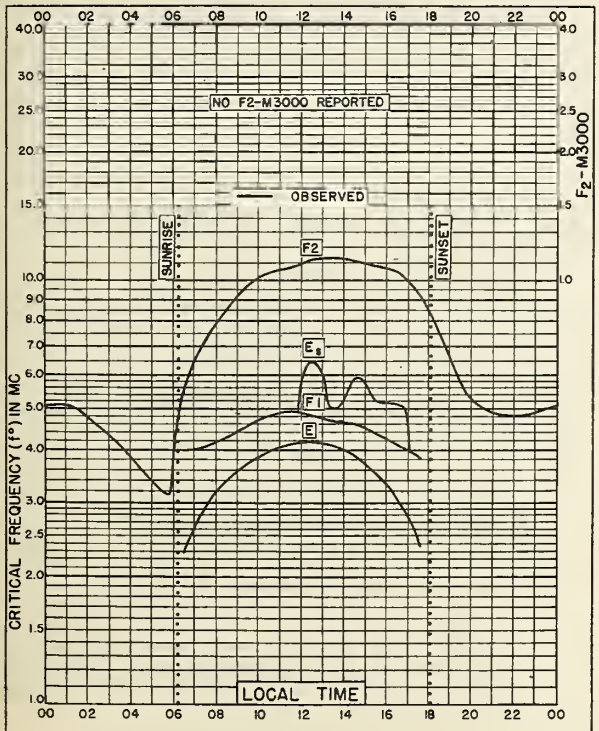

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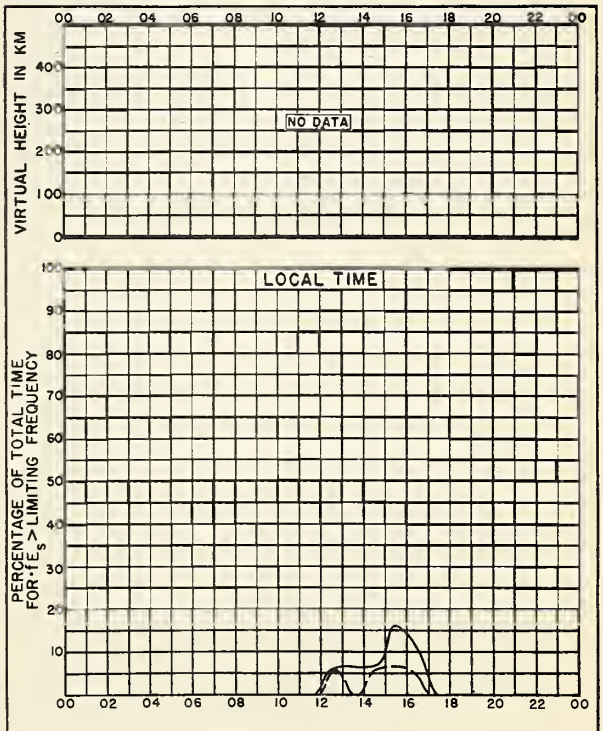

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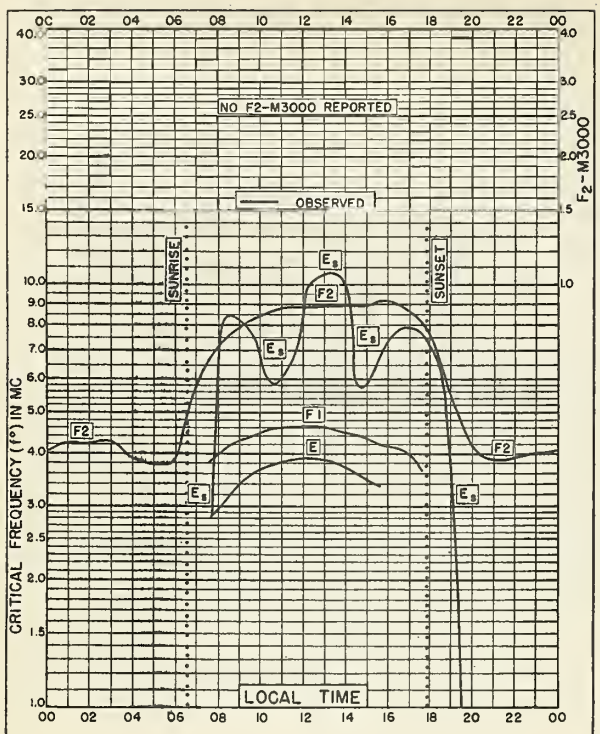

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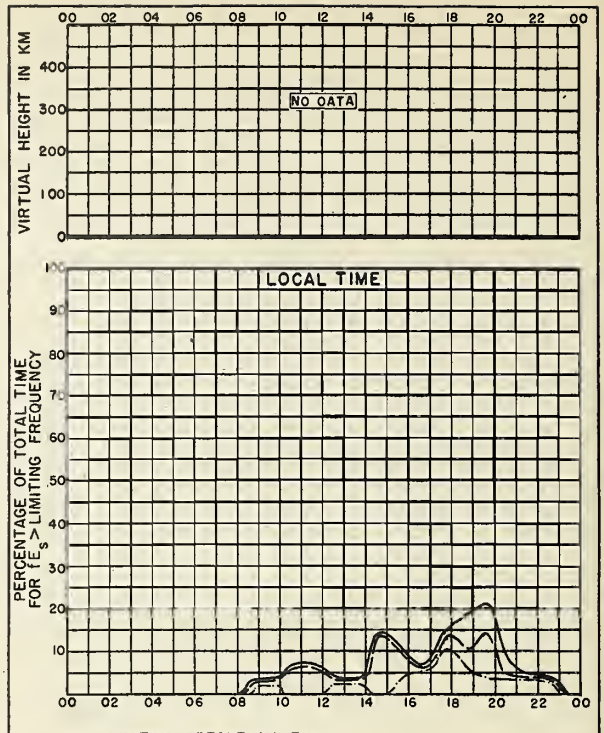

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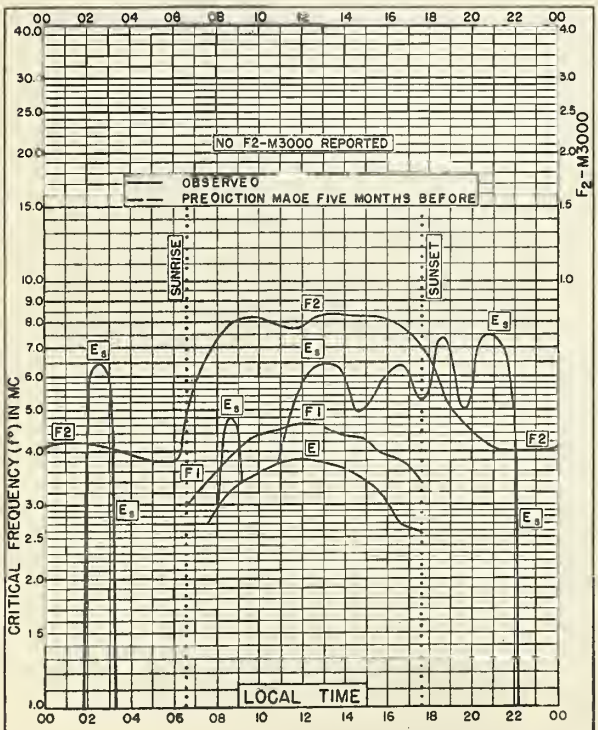

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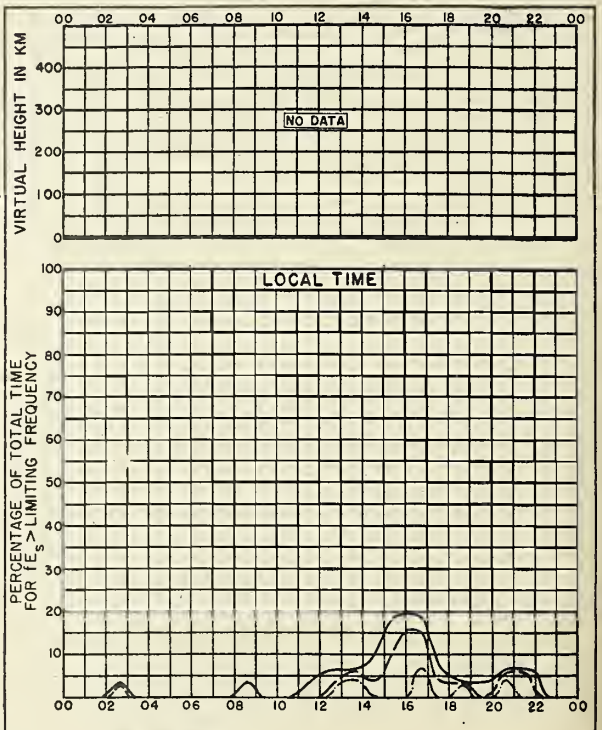

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Semimonthly:
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Monthly:
CRPL–D. Basic Radio Propagation Predictions—Three months in advance. (War Dept. TB 11–499–, monthly supplements to TM 11–499; Navy Dept. DNC–13–1 ( ), monthly supplements to DNC–13–1.)
CRPL–F. Ionospheric Data.

Quarterly:
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Reports issued in past:
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- R7. Second Report on Experimental Studies of Ionospheric Propagation as Applied to the Loran System.
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